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Radian Corp., Austin, TX

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16. ABSTRACT

The work which is described in this report was performed for the purpose of validating, through an interlaboratory study, Method 625 for the analysis of the base/neutral, acid, and pesticide priority pollutants. This method is based on the extraction and concentration of the various analytes followed by their determination through gas chromatography using a low resolution mass spectrometer as the measuring device.

Participating laboratories were selected based upon technical evaluation of proposals and upon the analyses results of prestudy samples. The laboratories were supplied with ampuls containing various concentrations of the pollutant compounds. These solutions were aliquoted into four different water types which were subsequently analyzed according to the appropriate method. In addition to the sample concentrates, each laboratory was supplied with an industrial effluent which was used to help determine false positive and false negative data.

The data obtained from the interlaboratory study were analyzed employing a series of computer programs known as the Interlaboratory Method Validation Study (IMVS) system which was designed to implement ASTM procedure D2777.

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EPA-600/4-84-053
June 1984

EPA METHOD STUDY 30,

METHOD 625 --

BASE/NEUTRALS, ACIDS AND PESTICIDES

by

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P. O. Box 9948
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FOREWORD

Environmental measurements are required to determine the quality of ambient waters and the character of waste effluents. The Environmental Monitoring and Support Laboratory (EMSL)-Cincinnati conducts research to:

- Develop and evaluate techniques to measure the presence and concentration of physical, chemical, radiological pollutants in water, wastewater, bottom sediments, and solid waste.
- Investigate methods for the concentration, recovery, and identification of viruses, bacteria, and other microorganisms in water.
- Conduct studies to determine the responses of aquatic organisms to water quality.
- Conduct an Agency-wide quality assurance program to assure standardization and quality control of systems for monitoring water and wastewater.

This publication reports the results of EPA's interlaboratory method study for the base/neutral and the acid compounds.

Federal agencies, states, municipalities, universities, private laboratories, and industry should find this interlaboratory study useful in monitoring and controlling pollution in the environment.

Robert L. Booth, Acting Director

ABSTRACT

The work which is described in the report was performed for the purpose of validating, through an interlaboratory study, proposed Method 625 for the analysis of the base/neutral (B/N), acid, and pesticide priority pollutants. This method is based on the extraction and concentration of the various analytes followed by their determination through gas chromatography using a low resolution mass spectrometer as the measuring device.

Participating laboratories were selected based upon technical evaluation of proposals and upon the analytical results of prestudy samples. The laboratories were supplied with ampules containing various concentrations of the pollutant compounds. These solutions were aliquoted into four different water types which were subsequently analyzed according to the appropriate methods. In addition to the sample concentrates, each laboratory was supplied with an industrial effluent which was known to contain various pollutants. The purpose of this sample was to determine the method's propensity to false positives and false negatives.

The data obtained from the interlaboratory study were analyzed employing a series of computer programs known as the Interlaboratory Method Validation Study (IMVS) system which was designed to implement ASTM procedure D2777. The IMVS analyses included tests for the rejection of outliers (both laboratory and individual), estimation of mean recovery (accuracy), estimation of single-analyst and overall precision, and tests for the effects of water type on accuracy and precision.

This report was submitted in partial fulfillment of contract number 68-03-3102 by Radian Corporation under the sponsorship of the U.S. Environmental Protection Agency. The report covers a period from January, 1982 to June, 1983.

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SECTION 1

INTRODUCTION

The various analytical laboratories of the U.S. Environmental Protection Agency (EPA) gather water quality data to provide information on water resources, to assist research activities, and to evaluate pollution abatement activities. The success of these pollution control activities depends upon the reliability of the data provided by the laboratories, particularly when legal action is involved.

The Environmental Monitoring and Support Laboratory-Cincinnati (EMSL-Cincinnati), of the US EPA develops analytical methods and conducts a quality assurance program for water and waste laboratories. The EMSL quality assurance program is designed to maximize the reliability and legal defensibility of all water quality information collected by EPA laboratories. The responsibility for EMSL's activities is assigned to the Quality Assurance Branch (QAB), which conducts interlaboratory tests of the methods. This study reports the results of the validation effort on Method 625 for the B/N, pesticide and acid compounds.

The interlaboratory study of Method 625 consisted of three distinct phases. Phase I involved the preparation of concentrates, ampuling of the concentrates and analytical verification of the concentrates using GC methods.

The second phase involved the selection of participating laboratories. Solicitation were made for paid participants and volunteer participants. Selection of laboratories was based on experience, facilities, quality control procedures, and cost

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estimates received from laboratories. Final selection of 15 laboratories was made after the successful analysis of a performance sample. No laboratories chose to participate in the study as volunteers.

The third phase involved conducting the study. The prepared ampules were distributed to each laboratory. Individual laboratories supplied the required four water types into which the ampules were to be spiked. As a separate study, a single water sample was supplied by Radian to evaluate the analysis of a very difficult sample (including tendencies for false-positives and false-negatives). After analysis, results were reported on standard data sheets. Data were keypunched and validated by Radian. The final step in the study was to conduct an analysis of all data obtained using the IMVS computer program [1].

SECTION 2

CONCLUSIONS

The objective of this interlaboratory study was to characterize the performance of Method 625 in terms of accuracy, overall precision, single-analyst precision, and the effect of water type on accuracy and precision. Through statistical analyses of 22,555 reported values, estimates of accuracy and precision were made and expressed in regression equations, shown in Table 1 for each compound. The equations were based on the 17,998 data values remaining after eliminating outliers in the IMVS program. The development and interpretation of these regression equations are discussed in Section 5. To facilitate the interpretation of these equations, Table 2 was prepared, in which accuracy (percent recovery), overall precision (percent standard deviation), and single-analyst precision (percent standard deviation) were computed (using the regression equations) at a prepared concentration of 100 µg/L.

The accuracy is obtained by comparing the mean recovery to the prepared values of the concentrations and computing the percent recovery. The mean recovery statistics (at 100 µg/L) for the B/N compounds range from 21% for dimethyl phthalate to 113% for isophorone. The average recovery is 74%. Both of these extremes are for the distilled water matrix. The mean recovery for 3,3'-dichlorobenzidine in the industrial effluent matrix is also 113%. One-half of the mean recoveries for the B/N compounds are between 61% and 87%, with one-fourth of the mean recoveries above and below these values. Recoveries for dimethyl phthalate are consistently low, ranging from 21% to 34%, for all water matrices.

TABLE 1-1

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 1

WATER TYPE	ACENAPHTHENE	ACENAPHTHYLENE	ALDRIN	ANTHRACENE
APPLICABLE CONC. RANGE	(7.0 - 400.0)	(8.0 - 450.0)	(11.0 - 600.0)	(5.0 - 600.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.15X - 0.12	SR = 0.24X - 1.06	SR = 0.27X - 1.28	SR = 0.21X - 0.32
OVERALL PRECISION	S = 0.21X - 0.67	S = 0.26X - 0.54	S = 0.43X + 1.13	S = 0.27X - 0.64
ACCURACY	X = 0.96C + 0.19	X = 0.89C + 0.74	X = 0.78C + 1.66	X = 0.80C + 0.68
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.09X + 0.56	SR = 0.16X + 0.37	SR = 0.28X - 0.48	SR = 0.15X - 0.17
OVERALL PRECISION	S = 0.17X + 0.10	S = 0.23X - 0.25	S = 0.47X - 0.92	S = 0.19X - 0.07
ACCURACY	X = 0.95C + 0.08	X = 0.87C + 0.48	X = 0.66C + 0.88	X = 0.82C + 0.42
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.21X - 0.60	SR = 0.14X - 0.01	SR = 0.36X - 1.64	SR = 0.18X + 0.02
OVERALL PRECISION	S = 0.27X - 0.02	S = 0.21X + 0.67	S = 0.52X - 1.01	S = 0.24X - 0.11
ACCURACY	X = 0.91C - 0.02	X = 0.97C + 0.24	X = 0.55C + 1.00	X = 0.81C + 0.55
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.15X - 0.07	SR = 0.13X - 0.35	SR = 0.38X + 0.17	SR = 0.17X - 0.03
OVERALL PRECISION	S = 0.18X + 0.38	S = 0.25X - 0.44	S = 0.59X + 0.08	S = 0.29X + 0.13
ACCURACY	X = 0.85C + 0.46	X = 0.88C - 0.03	X = 0.52C + 0.80	X = 0.74C + 0.88

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-2

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 5

WATER TYPE	B-BHC	BENZO(A)ANTHRACENE	BENZO(A)PYRENE	BENZO(B)FLUORANTHENE
APPLICABLE CONC. RANGE	(14.0 - 750.0)	(18.0 - 400.0)	(5.0 - 600.0)	(11.0 - 600.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.20X - 0.58	SR = 0.15X + 0.93	SR = 0.22X + 0.48	SR = 0.22X + 0.43
OVERALL PRECISION	S = 0.30X - 1.94	S = 0.26X - 0.28	S = 0.32X + 1.35	S = 0.29X + 0.96
ACCURACY	X = 0.87C - 0.94	X = 0.88C - 0.60	X = 0.90C - 0.13	X = 0.93C - 1.80
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.16X - 0.14	SR = 0.19X + 4.78	SR = 0.33X + 0.38	SR = 0.32X + 1.91
OVERALL PRECISION	S = 0.22X - 0.77	S = 0.26X + 2.49	S = 0.40X + 0.35	S = 0.45X + 1.04
ACCURACY	X = 0.81C - 0.43	X = 0.80C + 1.14	X = 0.79C - 0.95	X = 0.70C - 1.73
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.15X - 0.72	SR = 0.32X - 1.44	SR = 0.39X + 0.75	SR = 0.35X - 0.42
OVERALL PRECISION	S = 0.23X - 0.39	S = 0.36X - 0.63	S = 0.45X + 0.71	S = 0.42X + 0.82
ACCURACY	X = 0.80C - 0.44	X = 0.71C - 0.22	X = 0.68C - 0.04	X = 0.66C - 1.40
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.17X - 0.16	SR = 0.43X - 1.81	SR = 0.41X - 0.12	SR = 0.41X - 0.40
OVERALL PRECISION	S = 0.25X - 0.23	S = 0.53X - 0.46	S = 0.65X + 0.09	S = 0.62X - 0.08
ACCURACY	X = 0.84C - 0.89	X = 0.63C - 0.79	X = 0.56C - 0.26	X = 0.56C - 0.48

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-3

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 9

WATER TYPE	BIS(2-CHLOROETHYL)ETHER	DI-N-BUTYLPHTHALATE	DIBENZO(A,H)ANTHRACENE	DIETHYL PHTHALATE
APPLICABLE CONC. RANGE	(14.0 - 750.0)	(6.0 - 700.0)	(9.0 - 400.0)	(6.0 - 700.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.35X - 0.99	SR = 0.13X + 1.16	SR = 0.30X + 8.51	SR = 0.28X + 1.44
OVERALL PRECISION	S = 0.35X + 0.10	S = 0.39X + 0.60	S = 0.59X + 0.25	S = 0.52X + 0.22
ACCURACY	X = 0.86C - 1.54	X = 0.59C + 0.71	X = 0.88C + 4.72	X = 0.43C + 1.00
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.25X + 1.49	SR = 0.24X + 0.19	SR = 0.38X + 0.17	SR = 0.34X + 0.11
OVERALL PRECISION	S = 0.27X + 1.79	S = 0.34X - 0.12	S = 0.55X - 0.26	S = 0.65X - 0.20
ACCURACY	X = 0.87C - 2.52	X = 0.59C + 0.40	X = 0.85C - 4.72	X = 0.43C + 0.37
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.26X - 1.07	SR = 0.27X - 0.69	SR = 0.37X - 0.02	SR = 0.40X + 0.77
OVERALL PRECISION	S = 0.32X + 0.58	S = 0.34X + 0.84	S = 0.50X + 0.13	S = 0.50X + 0.44
ACCURACY	X = 0.89C - 1.02	X = 0.60C + 1.83	X = 0.64C - 1.44	X = 0.51C + 1.29
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.21X + 3.15	SR = 0.23X + 0.32	SR = 0.45X - 0.76	SR = 0.33X - 0.05
OVERALL PRECISION	S = 0.34X + 0.69	S = 0.47X - 0.18	S = 0.86X - 0.49	S = 0.45X + 0.20
ACCURACY	X = 0.91C - 0.72	X = 0.58C + 0.42	X = 0.63C - 2.51	X = 0.57C - 0.19

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-4

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 13

WATER TYPE	ENDOSULFAN SULFATE	FLUORANTHENE	HEPTACHLOR	HEXACHLOROBENZENE
APPLICABLE CONC. RANGE	(14.0 - 750.0)	(6.0 - 700.0)	(11.0 - 600.0)	(6.0 - 535.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.12X + 2.47	SR = 0.22X - 0.73	SR = 0.24X - 0.56	SR = 0.18X - 0.10
OVERALL PRECISION	S = 0.63X - 1.03	S = 0.28X - 0.60	S = 0.50X - 0.23	S = 0.43X - 0.52
ACCURACY	X = 0.39C + 0.41	X = 0.81C + 1.10	X = 0.87C - 2.97	X = 0.74C + 0.66
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.20X + 1.28	SR = 0.12X + 0.93	SR = 0.37X - 0.68	SR = 0.25X + 0.15
OVERALL PRECISION	S = 0.66X - 0.60	S = 0.22X + 0.12	S = 0.44X - 0.17	S = 0.30X + 0.19
ACCURACY	X = 0.68C - 4.82	X = 0.76C + 0.84	X = 0.73C - 2.31	X = 0.72C + 0.20
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.22X - 0.86	SR = 0.23X - 0.70	SR = 0.38X - 1.70	SR = 0.23X - 0.52
OVERALL PRECISION	S = 0.67X - 2.55	S = 0.29X - 0.64	S = 0.50X - 1.20	S = 0.32X - 0.22
ACCURACY	X = 0.63C - 1.95	X = 0.71C + 1.15	X = 0.73C - 2.07	X = 0.69C + 0.65
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.40X - 0.24	SR = 0.19X + 0.73	SR = 0.39X - 0.95	SR = 0.17X + 0.14
OVERALL PRECISION	S = 0.70X - 0.34	S = 0.36X + 0.17	S = 0.49X + 0.09	S = 0.38X - 0.52
ACCURACY	X = 0.65C - 4.67	X = 0.68C + 1.53	X = 0.68C - 1.44	X = 0.58C + 0.22

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-5

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 17

WATER TYPE	ISOPHORONE	NAPHTHALENE	PCB-1260	1,3-DICHLOROBENZENE
APPLICABLE CONC. RANGE	(5.0 - 600.0)	(6.0 - 700.0)	(36.0 - 667.0)	(5.0 - 600.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.27X + 0.77	SR = 0.21X - 0.41	SR = 0.35X + 3.61	SR = 0.25X + 0.68
OVERALL PRECISION	S = 0.33X + 0.26	S = 0.30X - 0.68	S = 0.43X + 1.82	S = 0.41X + 0.11
ACCURACY	X = 1.12C + 1.41	X = 0.76C + 1.58	X = 0.81C -10.86	X = 0.86C - 0.70
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.30X - 0.22	SR = 0.18X - 0.36	SR = 0.50X - 2.60	SR = 0.24X + 0.90
OVERALL PRECISION	S = 0.52X - 0.34	S = 0.24X - 0.34	S = 0.51X + 4.39	S = 0.42X - 0.03
ACCURACY	X = 1.10C + 2.07	X = 0.77C + 1.28	X = 0.68C -17.11	X = 0.89C - 1.10
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.20X + 1.36	SR = 0.24X - 0.84	SR = 0.72X - 4.51	SR = 0.32X + 0.14
OVERALL PRECISION	S = 0.35X + 0.94	S = 0.27X - 0.09	S = 0.65X - 1.11	S = 0.34X - 0.15
ACCURACY	X = 1.05C + 0.65	X = 0.78C + 1.39	X = 0.51C -11.95	X = 0.92C - 0.84
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.42X - 3.27	SR = 0.20X - 0.18	SR = 0.43X + 2.02	SR = 0.33X + 0.49
OVERALL PRECISION	S = 0.57X + 0.64	S = 0.33X - 0.51	S = 0.57X - 0.49	S = 0.41X + 0.73
ACCURACY	X = 1.00C + 9.41	X = 0.70C + 1.82	X = 0.46C -12.56	X = 0.79C - 0.27

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-6

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 21

WATER TYPE	2,6-DINITROTOLUENE	3,3 -DICHLOROBENZIDINE	4-CHLOROPHENYL PHENYL ETH	4,4 -DDD
APPLICABLE CONC. RANGE	(11.0 - 600.0)	(36.0 - 667.0)	(9.0 - 500.0)	(7.0 - 400.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.14X + 1.26	SR = 0.28X + 7.33	SR = 0.20X - 0.94	SR = 0.29X - 0.32
OVERALL PRECISION	S = 0.19X + 0.35	S = 0.47X + 3.45	S = 0.30X - 0.46	S = 0.66X - 0.96
ACCURACY	X = 1.06C - 3.60	X = 1.23C -12.65	X = 0.91C + 0.53	X = 0.56C - 0.40
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.18X + 0.20	SR = 0.23X + 4.38	SR = 0.15X - 0.28	SR = 0.31X + 0.64
OVERALL PRECISION	S = 0.21X - 0.01	S = 0.44X + 5.46	S = 0.25X - 0.26	S = 0.55X - 0.33
ACCURACY	X = 1.02C - 2.81	X = 1.11C -12.56	X = 0.95C + 0.04	X = 0.54C - 0.16
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.20X + 0.75	SR = 0.65X -11.31	SR = 0.15X - 0.43	SR = 0.45X - 1.47
OVERALL PRECISION	S = 0.26X + 2.25	S = 0.70X - 9.34	S = 0.25X - 0.68	S = 0.68X - 1.33
ACCURACY	X = 1.06C - 3.52	X = 1.22C -20.68	X = 0.97C + 0.65	X = 0.49C + 0.31
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.27X - 1.66	SR = 0.23X + 7.55	SR = 0.19X - 0.20	SR = 0.45X - 0.55
OVERALL PRECISION	S = 0.31X + 0.53	S = 0.42X + 0.78	S = 0.35X - 1.34	S = 0.58X - 0.79
ACCURACY	X = 1.05C - 1.78	X = 1.33C -20.41	X = 0.81C + 0.42	X = 0.46C - 0.38

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-7

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUND 25 - 25

WATER TYPE	4,4 -DDE
APPLICABLE CONC. RANGE	(14.0 - 750.0)
DISTILLED WATER	
SINGLE-ANALYST PRECISION	SR = 0.26X - 1.17
OVERALL PRECISION	S = 0.39X - 1.04
ACCURACY	X = 0.70C - 0.54
TAP WATER	
SINGLE-ANALYST PRECISION	SR = 0.35X + 0.38
OVERALL PRECISION	S = 0.38X - 0.14
ACCURACY	X = 0.57C - 0.28
SURFACE WATER	
SINGLE-ANALYST PRECISION	SR = 0.21X - 0.44
OVERALL PRECISION	S = 0.39X - 1.06
ACCURACY	X = 0.47C - 0.30
INDUSTRIAL EFFLUENT	
SINGLE-ANALYST PRECISION	SR = 0.39X + 0.37
OVERALL PRECISION	S = 0.49X - 0.47
ACCURACY	X = 0.47C + 0.03

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

@BRKPT PRINTS

TABLE 1-8

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 1

WATER TYPE	BENZO(G,H,I)PERYLENE	BENZO(K)FLUORANTHENE	BENZYL BUTYL PHTHALATE	BIS(2-CHLOROETHOXY)METHAN
APPLICABLE CONC. RANGE	(7.4 - 292.0)	(7.2 - 548.0)	(7.2 - 548.0)	(11.0 - 646.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.29X + 2.40	SR = 0.19X + 1.03	SR = 0.18X + 0.94	SR = 0.16X + 1.34
OVERALL PRECISION	S = 0.51X - 0.44	S = 0.35X + 0.40	S = 0.53X + 0.92	S = 0.26X + 2.01
ACCURACY	X = 0.98C - 0.86	X = 0.87C - 1.56	X = 0.66C - 1.68	X = 1.12C - 5.04
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.43X - 1.02	SR = 0.20X - 0.17	SR = 0.17X + 2.17	SR = 0.15X + 2.85
OVERALL PRECISION	S = 0.54X - 0.85	S = 0.36X + 0.39	S = 0.52X + 1.34	S = 0.26X + 2.75
ACCURACY	X = 0.70C - 1.79	X = 0.65C - 0.64	X = 0.61C - 0.26	X = 1.05C - 4.58
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.47X + 0.39	SR = 0.39X + 0.69	SR = 0.51X - 0.33	SR = 0.32X - 0.34
OVERALL PRECISION	S = 0.64X - 0.53	S = 0.55X + 0.48	S = 0.61X + 0.29	S = 0.33X + 1.28
ACCURACY	X = 0.65C - 2.98	X = 0.63C - 0.44	X = 0.52C - 0.65	X = 0.95C - 2.98
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.35X - 0.02	SR = 0.27X + 0.89	SR = 0.51X - 0.39	SR = 0.23X + 2.70
OVERALL PRECISION	S = 0.68X - 0.12	S = 0.64X + 0.22	S = 0.57X + 0.75	S = 0.30X + 1.76
ACCURACY	X = 0.60C - 1.71	X = 0.54C + 0.56	X = 0.62C + 0.21	X = 1.01C + 0.12

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-9

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 5

WATER TYPE	BIS(2-CHLOROISOPROPYL)ETH	BIS(2-ETHYLHEXYL)PHTHALAT	CHRYSENE	B-BHC
APPLICABLE CONC. RANGE	(14.0 - 508.0)	(7.2 - 548.0)	(5.4 - 411.0)	(7.2 - 547.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.24X + 0.28	SR = 0.26X + 0.73	SR = 0.28X + 0.13	SR = 0.34X + 0.86
OVERALL PRECISION	S = 0.25X + 1.04	S = 0.36X + 0.67	S = 0.33X - 0.09	S = 0.93X - 0.17
ACCURACY	X = 1.03C - 2.31	X = 0.84C - 1.18	X = 0.93C - 1.00	X = 0.29C - 1.09
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.15X + 1.23	SR = 0.27X + 0.50	SR = 0.17X + 0.80	SR = 0.20X + 0.75
OVERALL PRECISION	S = 0.28X + 0.70	S = 0.48X + 0.44	S = 0.25X + 0.62	S = 0.91X - 0.14
ACCURACY	X = 0.93C - 1.95	X = 0.63C - 2.33	X = 0.80C - 0.55	X = 0.35C - 0.75
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.33X - 1.59	SR = 0.39X - 0.45	SR = 0.35X - 0.14	SR = 0.62X - 2.52
OVERALL PRECISION	S = 0.30X + 1.21	S = 0.49X - 0.17	S = 0.44X - 0.21	S = 0.90X - 0.67
ACCURACY	X = 0.85C + 0.87	X = 0.51C - 1.81	X = 0.62C + 0.16	X = 0.33C - 0.91
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.12X + 0.88	SR = 0.32X + 0.69	SR = 0.33X + 0.28	SR = 0.32X + 0.95
OVERALL PRECISION	S = 0.21X + 0.09	S = 0.64X + 0.13	S = 0.52X + 0.14	S = 0.78X - 0.35
ACCURACY	X = 0.95C + 0.13	X = 0.52C - 0.94	X = 0.66C + 0.27	X = 0.42C + 0.23

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-10

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 9

WATER TYPE	DI-N-OCTYLPHTHALATE	DIELDRIN	DIMETHYL PHTHALATE	ENDRIN ALDEHYDE
APPLICABLE CONC. RANGE	(7.2 - 548.0)	(7.2 - 548.0)	(4.5 - 343.0)	(22.0 - 658.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.21X + 1.19	SR = 0.20X - 0.16	SR = 0.54X + 0.19	SR = 0.18X + 3.91
OVERALL PRECISION	S = 0.37X + 1.19	S = 0.26X - 0.07	S = 1.05X - 0.92	S = 0.73X - 0.62
ACCURACY	X = 0.76C - 0.79	X = 0.82C - 0.16	X = 0.20C + 1.03	X = 0.76C - 3.86
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.26X + 0.52	SR = 0.20X - 0.46	SR = 0.27X + 0.08	SR = 0.38X - 0.02
OVERALL PRECISION	S = 0.53X + 0.10	S = 0.29X - 0.84	S = 1.01X - 0.26	S = 0.65X + 0.32
ACCURACY	X = 0.55C - 2.26	X = 0.71C + 0.47	X = 0.30C - 0.13	X = 0.59C - 4.02
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.45X - 0.59	SR = 0.26X - 0.88	SR = 0.75X - 0.98	SR = 0.15X + 2.12
OVERALL PRECISION	S = 0.57X - 0.26	S = 0.32X - 0.92	S = 1.07X - 0.88	S = 0.66X - 1.32
ACCURACY	X = 0.51C - 1.69	X = 0.69C + 0.84	X = 0.29C + 0.50	X = 0.60C + 0.78
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.32X + 0.65	SR = 0.26X - 0.18	SR = 0.70X - 0.35	SR = 0.46X - 2.89
OVERALL PRECISION	S = 0.75X + 0.09	S = 0.33X - 0.23	S = 0.89X - 0.39	S = 0.74X + 0.92
ACCURACY	X = 0.49C - 1.30	X = 0.67C + 1.29	X = 0.35C - 0.63	X = 0.57C - 1.58

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-11

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 13

WATER TYPE	FLUORENE	HEPTACHLOR EPOXIDE	HEXACHLOROBUTADIENE	HEXACHLOROETHANE
APPLICABLE CONC. RANGE	(5.4 - 411.0)	(7.2 - 548.0)	(9.0 - 685.0)	(6.3 - 480.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.12X + 0.26	SR = 0.33X - 0.46	SR = 0.19X + 0.92	SR = 0.17X + 0.67
OVERALL PRECISION	S = 0.13X + 0.61	S = 0.28X + 0.64	S = 0.26X + 0.49	S = 0.17X + 0.80
ACCURACY	X = 0.90C - 0.00	X = 0.92C - 1.87	X = 0.71C - 1.01	X = 0.73C - 0.83
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.10X + 0.53	SR = 0.16X + 0.55	SR = 0.16X + 0.85	SR = 0.21X + 0.60
OVERALL PRECISION	S = 0.13X + 0.56	S = 0.36X - 0.15	S = 0.16X + 1.22	S = 0.21X + 0.56
ACCURACY	X = 0.83C + 0.30	X = 0.88C - 1.80	X = 0.63C - 0.74	X = 0.68C - 0.23
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.23X - 0.47	SR = 0.24X - 0.08	SR = 0.19X + 0.09	SR = 0.29X - 0.54
OVERALL PRECISION	S = 0.27X - 0.20	S = 0.35X - 0.18	S = 0.21X + 0.87	S = 0.26X + 0.44
ACCURACY	X = 0.78C + 0.30	X = 0.85C - 0.69	X = 0.62C - 0.10	X = 0.69C - 0.70
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.14X + 1.20	SR = 0.42X + 0.15	SR = 0.23X + 0.88	SR = 0.20X + 0.39
OVERALL PRECISION	S = 0.25X + 0.92	S = 0.42X + 0.05	S = 0.28X + 1.06	S = 0.23X + 1.02
ACCURACY	X = 0.72C + 1.26	X = 0.69C - 1.03	X = 0.59C + 0.11	X = 0.69C - 0.24

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-12

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 17

WATER TYPE	INDENO(1,2,3-C,D)PYRENE	N-NITROSODI-N-PROPYLAMINE	NITROBENZENE	PHENANTHRENE
APPLICABLE CONC. RANGE	(7.4 - 292.0)	(18.0 - 527.0)	(9.0 - 685.0)	(9.0 - 685.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.29X + 1.46	SR = 0.27X + 0.68	SR = 0.19X + 0.92	SR = 0.12X + 0.57
OVERALL PRECISION	S = 0.50X + 0.46	S = 0.44X + 0.47	S = 0.27X + 0.21	S = 0.15X + 0.25
ACCURACY	X = 0.78C - 3.10	X = 1.12C - 6.22	X = 1.09C - 3.05	X = 0.87C - 0.06
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.26X + 0.18	SR = 0.30X + 3.39	SR = 0.14X + 0.92	SR = 0.09X - 0.04
OVERALL PRECISION	S = 0.50X + 0.57	S = 0.44X + 2.69	S = 0.28X + 0.81	S = 0.10X + 0.23
ACCURACY	X = 0.58C - 2.55	X = 1.09C - 8.18	X = 1.01C - 3.19	X = 0.78C + 0.73
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.53X - 0.20	SR = 0.43X - 3.07	SR = 0.34X - 2.25	SR = 0.16X - 0.24
OVERALL PRECISION	S = 0.57X + 0.21	S = 0.55X - 3.33	S = 0.34X + 0.84	S = 0.19X - 0.35
ACCURACY	X = 0.49C - 1.73	X = 1.03C - 3.35	X = 0.97C - 1.13	X = 0.75C + 1.40
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.36X + 0.49	SR = 0.36X + 1.77	SR = 0.18X + 1.58	SR = 0.12X + 0.94
OVERALL PRECISION	S = 0.60X + 0.08	S = 0.47X + 1.52	S = 0.34X - 0.11	S = 0.29X - 0.06
ACCURACY	X = 0.54C - 1.91	X = 0.88C + 0.64	X = 1.01C - 2.70	X = 0.81C + 1.08

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-13

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 21

WATER TYPE	PYRENE	1,2-DICHLOROBENZENE	1,2,4-TRICHLOROBENZENE	1,4-DICHLOROBENZENE
APPLICABLE CONC. RANGE	(4.5 - 343.0)	(5.4 - 411.0)	(10.0 - 622.0)	(11.0 - 646.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.16X + 0.06	SR = 0.20X + 0.47	SR = 0.15X + 0.85	SR = 0.24X + 0.23
OVERALL PRECISION	S = 0.15X + 0.31	S = 0.24X + 0.39	S = 0.21X + 0.39	S = 0.29X + 0.36
ACCURACY	X = 0.84C - 0.16	X = 0.80C + 0.28	X = 0.94C - 0.79	X = 0.73C - 1.47
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.10X + 0.22	SR = 0.17X + 1.00	SR = 0.16X + 0.11	SR = 0.18X + 0.03
OVERALL PRECISION	S = 0.13X + 0.50	S = 0.25X + 0.93	S = 0.23X + 0.67	S = 0.32X - 0.00
ACCURACY	X = 0.76C - 0.06	X = 0.78C + 0.54	X = 0.80C - 0.04	X = 0.75C - 1.90
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.16X - 0.17	SR = 0.28X - 0.36	SR = 0.19X + 0.27	SR = 0.30X - 1.14
OVERALL PRECISION	S = 0.18X + 0.26	S = 0.25X + 1.46	S = 0.20X + 1.60	S = 0.31X - 0.19
ACCURACY	X = 0.73C + 0.39	X = 0.75C + 1.18	X = 0.78C + 0.44	X = 0.68C - 1.37
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.17X + 0.16	SR = 0.25X - 0.05	SR = 0.13X + 1.04	SR = 0.22X + 0.21
OVERALL PRECISION	S = 0.36X + 0.51	S = 0.35X + 0.26	S = 0.24X + 0.48	S = 0.30X + 0.15
ACCURACY	X = 0.69C + 1.52	X = 0.73C + 1.21	X = 0.81C + 0.01	X = 0.70C - 0.65

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

TABLE 1-14

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 25

WATER TYPE	2-CHLORONAPHTHALENE	2,4-DINITROTOLUENE	4-BROMOPHENYL PHENYL ETHE	4,4 -DDT
APPLICABLE CONC. RANGE	(4.5 - 342.0)	(11.0 - 646.0)	(7.2 - 548.0)	(7.0 - 548.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.07X + 0.52	SR = 0.12X + 1.06	SR = 0.13X + 0.66	SR = 0.42X + 0.19
OVERALL PRECISION	S = 0.13X + 0.34	S = 0.21X + 1.50	S = 0.16X + 0.66	S = 0.65X - 0.58
ACCURACY	X = 0.89C + 0.01	X = 0.92C - 4.81	X = 0.91C - 1.34	X = 0.79C - 3.28
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.10X + 0.32	SR = 0.18X + 0.89	SR = 0.15X + 0.23	SR = 0.51X - 0.64
OVERALL PRECISION	S = 0.14X + 0.49	S = 0.27X + 2.08	S = 0.17X + 0.88	S = 0.68X - 0.54
ACCURACY	X = 0.85C + 0.03	X = 0.83C - 2.57	X = 0.85C - 1.21	X = 0.66C - 2.71
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.24X + 0.28	SR = 0.21X + 0.46	SR = 0.16X + 0.22	SR = 0.60X - 1.16
OVERALL PRECISION	S = 0.24X + 0.42	S = 0.31X + 1.03	S = 0.14X + 1.26	S = 0.64X - 0.01
ACCURACY	X = 0.79C + 0.36	X = 0.83C - 2.91	X = 0.83C - 0.58	X = 0.56C - 2.13
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.15X + 0.24	SR = 0.11X + 2.28	SR = 0.21X + 0.50	SR = 0.46X - 0.30
OVERALL PRECISION	S = 0.23X - 0.05	S = 0.11X + 2.41	S = 0.30X + 0.02	S = 0.71X - 0.42
ACCURACY	X = 0.82C + 0.63	X = 0.93C - 0.64	X = 0.72C - 0.19	X = 0.53C - 2.12

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

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TABLE 1-15

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 1

WATER TYPE	PENTACHLOROPHENOL	PHENOL	2-CHLOROPHENOL	2-METHYL-4,6-DINITROPHENO*
APPLICABLE CONC. RANGE	(13.0 - 480.0)	(6.0 - 467.0)	(7.0 - 533.0)	(72.0 - 1067.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.24X + 3.03	SR = 0.26X + 0.73	SR = 0.18X + 1.46	SR = 0.22X + 9.86
OVERALL PRECISION	S = 0.30X + 4.35	S = 0.35X + 0.58	S = 0.28X + 0.97	S = 0.30X +11.31
ACCURACY	X = 0.93C + 1.99	X = 0.49C + 1.26	X = 0.78C + 0.29	X = 1.05C -33.88
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.38X - 0.69	SR = 0.24X + 1.50	SR = 0.23X + 0.77	SR = 0.26X + 9.38
OVERALL PRECISION	S = 0.38X + 3.79	S = 0.43X + 0.64	S = 0.32X + 0.27	S = 0.36X +11.44
ACCURACY	X = 0.82C + 3.68	X = 0.44C + 1.14	X = 0.75C + 0.16	X = 0.99C -28.14
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.19X + 0.33	SR = 0.23X + 0.47	SR = 0.17X + 0.16	SR = 0.24X - 2.78
OVERALL PRECISION	S = 0.30X + 2.10	S = 0.28X + 0.63	S = 0.24X - 0.16	S = 0.40X + 6.33
ACCURACY	X = 0.85C + 2.89	X = 0.47C + 1.11	X = 0.75C - 0.07	X = 1.10C -22.92
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.18X + 1.09	SR = 0.27X - 0.19	SR = 0.14X - 0.35	SR = 0.23X - 5.99
OVERALL PRECISION	S = 0.26X + 4.51	S = 0.35X - 0.05	S = 0.21X + 0.48	S = 0.41X + 3.52
ACCURACY	X = 0.73C + 3.38	X = 0.44C + 1.37	X = 0.72C + 0.63	X = 1.01C -14.22

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

* Revised regression equations and estimates of accuracy and precision are given in Tables 14 and 15.

TABLE 1-16

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 5

WATER TYPE	2-NITROPHENOL	2,4-DICHLOROPHENOL	2,4-DIMETHYLPHENOL	2,4-DINITROPHENOL *
APPLICABLE CONC. RANGE	(14.0 - 520.0)	(8.0 - 600.0)	(9.0 - 667.0)	(90.0 - 1333.0)
DISTILLED WATER				
SINGLE-ANALYST PRECISION	SR = 0.16X + 1.94	SR = 0.15X + 1.25	SR = 0.16X + 1.21	SR = 0.38X + 2.39
OVERALL PRECISION	S = 0.27X + 2.60	S = 0.21X + 1.28	S = 0.22X + 1.31	S = 0.42X + 26.26
ACCURACY	X = 1.07C - 1.15	X = 0.87C + 0.13	X = 0.71C + 4.41	X = 1.55C - 100.90
TAP WATER				
SINGLE-ANALYST PRECISION	SR = 0.19X + 1.93	SR = 0.19X + 0.67	SR = 0.24X + 0.71	SR = 0.33X + 6.19
OVERALL PRECISION	S = 0.24X + 2.32	S = 0.24X + 1.00	S = 0.38X + 1.71	S = 0.48X +13.01
ACCURACY	X = 0.95C - 0.46	X = 0.82C + 0.57	X = 0.58C + 1.13	X = 1.48C -98.47
SURFACE WATER				
SINGLE-ANALYST PRECISION	SR = 0.17X + 0.24	SR = 0.14X + 0.33	SR = 0.30X - 0.58	SR = 0.28X + 1.15
OVERALL PRECISION	S = 0.26X + 2.27	S = 0.22X + 0.82	S = 0.41X - 0.41	S = 0.30X +26.92
ACCURACY	X = 0.97C - 0.78	X = 0.89C + 0.01	X = 0.62C + 2.10	X = 1.56C -85.38
INDUSTRIAL EFFLUENT				
SINGLE-ANALYST PRECISION	SR = 0.15X + 0.77	SR = 0.17X - 0.24	SR = 0.29X + 0.10	SR = 0.25X + 6.45
OVERALL PRECISION	S = 0.33X + 1.66	S = 0.23X + 0.46	S = 0.59X - 0.15	S = 0.36X +22.05
ACCURACY	X = 0.9CC + 0.78	X = 0.81C + 0.61	X = 0.49C + 1.91	X = 1.24C -54.61

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

* Revised regression equations and estimates of accuracy and precision are given in Tables 14 and 15.

TABLE 1-17

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

REGRESSION EQUATIONS FOR ACCURACY AND PRECISION FOR COMPOUNDS 9

WATER TYPE	2,4,6-TRICHLOROPHENOL	4-CHLORO-3-METHYLPHENOL	4-NITROPHENOL
APPLICABLE CONC. RANGE	(11.9 - 440.0)	(9.0 - 667.0)	(21.6 - 800.0)
DISTILLED WATER			
SINGLE-ANALYST PRECISION	SR = 0.16X + 2.22	SR = 0.23X + 0.75	SR = 0.38X + 2.57
OVERALL PRECISION	S = 0.22X + 1.81	S = 0.29X + 1.31	S = 0.44X + 3.24
ACCURACY	X = 0.91C - 0.1P	X = 0.84C + 0.35	X = 0.61C - 1.22
TAP WATER			
SINGLE-ANALYST PRECISION	SR = 0.17X + 2.35	SR = 0.18X + 1.49	SR = 0.28X + 2.44
OVERALL PRECISION	S = 0.19X + 1.85	S = 0.27X + 1.33	S = 0.44X + 2.09
ACCURACY	X = 0.88C + 1.26	X = 0.77C + 0.67	X = 0.56C - 2.16
SURFACE WATER			
SINGLE-ANALYST PRECISION	SR = 0.16X + 0.42	SR = 0.18X + 0.30	SR = 0.31X - 0.33
OVERALL PRECISION	S = 0.28X + 0.92	S = 0.28X + 1.28	S = 0.43X + 2.90
ACCURACY	X = 0.88C - 0.36	X = 0.81C - 0.03	X = 0.58C + 0.74
INDUSTRIAL EFFLUENT			
SINGLE-ANALYST PRECISION	SR = 0.28X + 3.09	SR = 0.14X + 1.31	SR = 0.43X - 2.96
OVERALL PRECISION	S = 0.23X + 1.35	S = 0.27X + 1.46	S = 0.39X + 5.09
ACCURACY	X = 0.82C + 1.36	X = 0.76C + 0.95	X = 0.52C + 7.02

X = MEAN RECOVERY
C = TRUE VALUE FOR THE CONCENTRATION

BRKPT PRINTS

TABLE 2-1. ACCURACY AND PRECISION ESTIMATES (COMPUTED FROM THE REGRESSION EQUATIONS) FOR A PREPARED CONCENTRATION OF 100 µg/L - B/N COMPOUNDS

COMPOUND	DISTILLED WATER			TAP WATER			SURFACE WATER			IND. EFFLUENT		
	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA
ACENAPHTHENE	96	20	15	95	17	10	91	27	20	85	18	15
ACENAPHTHYLENE	90	25	23	87	23	16	97	22	14	88	24	13
ALDRIN	80	44	29	67	46	27	56	50	33	53	59	38
ANTHRACENE	81	26	21	82	19	15	82	24	18	75	29	17
B-BHC	86	28	19	81	21	16	80	23	14	83	25	17
BENZO(A)ANTHRACENE	87	26	16	81	29	25	71	35	30	62	52	40
BENZO(A)PYRENE	90	34	23	78	40	33	68	46	40	56	65	41
BENZO(B)FLUORANTHENE	91	30	22	68	47	35	65	43	34	56	62	40
BIS(2-CHLOROETHYL)ETHER	84	35	34	84	29	27	88	33	25	90	35	24
DI-N-BUTYLPHTHALATE	60	40	15	59	34	24	62	35	26	58	47	24
DIBENZO(A,H)ANTHRACENE	93	59	39	80	55	38	63	50	37	60	85	44
DIETHYL PHTHALATE	44	52	31	43	65	34	52	51	41	57	45	33
ENDOSULFAN SULFATE	39	60	18	63	65	22	61	63	21	60	69	40
FLUORANTHENE	82	27	21	77	22	13	72	28	22	70	36	20
HEPTACHLOR	84	50	23	71	44	36	71	48	36	67	49	38
HEXACHLOROBENZENE	75	42	18	72	30	25	70	32	22	58	37	17
ISOPHORONE	113	33	28	112	52	30	106	36	21	109	58	39
NAPHTHALENE	78	29	20	78	24	18	79	27	23	72	32	20
PCB-1260	70	46	40	51	60	45	39	62	60	33	56	49
1,3-DICHLOROBENZENE	85	41	26	88	42	25	91	34	32	79	42	34
2,6-DINITROTOLUENE	102	19	15	99	21	18	102	28	21	103	32	25
3,3'-DICHLOROBENZIDINE	110	50	35	98	50	27	101	61	54	113	43	30
4-CHLOROPHENYL PHENYL ETHER	92	29	19	95	25	15	98	24	15	81	33	19
4,4'-DDD	56	64	28	54	54	32	49	65	42	46	56	44
4,4'-DDE	69	38	24	57	38	36	47	37	20	47	48	40
BENZO(G,H,I)PERYLENE	97	51	31	68	53	42	62	63	48	58	68	35
BENZO(K)FLUORANTHENE	85	35	20	64	37	20	63	56	40	55	64	29
BENZYL BUTYL PHTHALATE	64	54	19	61	54	21	51	62	50	62	58	50
BIS(2-CHLOROETHOXY)METHANE	107	28	17	100	29	18	92	34	32	101	32	26
BIS(2-CHLOROISOPROPYL)ETHER	101	26	24	91	29	16	86	31	31	95	21	13
BIS(2-ETHYLHEXYL)PHTHALATE	83	37	27	61	49	28	49	49	38	51	64	33
CHRYSENE	92	33	28	79	26	18	62	44	35	66	52	33
D-BHC	28	92	37	34	91	22	32	88	54	42	77	34

TABLE 2-1. (Continued)

COMPOUND	DISTILLED WATER			TAP WATER			SURFACE WATER			IND. EFFLUENT		
	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA
DI-N-OCTYLPHTHALATE	75	39	23	53	53	27	49	56	44	48	75	33
DIELDRIN	82	26	20	71	28	19	70	31	25	68	33	26
DIMETHYL PHTHALATE	21	101	55	30	100	27	30	104	72	34	88	69
ENDRIN ALDEHYDE	72	72	23	55	66	38	61	64	18	55	76	41
FLUORENE	90	14	12	83	14	11	78	27	22	73	26	16
HEPTACHLOR EPOXIDE	90	29	32	86	36	17	84	35	24	68	42	42
HEXACHLOROBUTADIENE	70	27	20	62	18	17	62	22	19	59	30	24
HEXACHLOROETHANE	72	18	18	68	22	22	68	27	28	69	24	21
INDENO(1,2,3-C,D)PYRENE	75	51	31	55	51	26	47	57	53	52	60	37
N-NITROSODI-N-PROPYLAMINE	106	44	28	101	47	33	100	52	40	89	49	38
NITROBENZENE	106	27	20	98	29	15	96	35	32	98	34	20
PHENANTHRENE	87	15	13	79	10	9	76	19	16	82	29	13
PYRENE	84	15	16	76	14	10	73	18	16	71	37	17
1,2-DICHLOROBENZENE	80	24	21	79	26	18	76	27	28	74	35	25
1,2,4-TRICHLOROBENZENE	93	21	16	80	24	16	78	22	19	81	25	14
1,4-DICHLOROBENZENE	72	30	24	73	32	18	67	31	28	69	30	22
2-CHLORONAPHTHALENE	89	13	8	85	15	10	79	25	24	83	23	15
2,4-DINITROTOLUENE	87	23	13	80	30	19	80	32	22	92	14	13
4-BROMOPHENYL PHENYL ETHER	90	17	14	84	18	15	82	16	16	72	30	22
4,4'-DDT	76	64	42	63	67	50	54	64	58	51	70	45

TABLE 2-2. ACCURACY AND PRECISION ESTIMATES (COMPUTED FROM THE REGRESSION EQUATIONS) FOR A PREPARED CONCENTRATION OF 100 µg/L - ACID COMPOUNDS

COMPOUND	DISTILLED WATER			TAP WATER			SURFACE WATER			IND. EFFLUENT		
	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA
PENTACHLOROPHENOL	95	35	27	86	42	37	88	32	19	76	32	19
PHENOL	44	36	28	45	44	27	48	29	24	45	35	27
2-CHLOROPHENOL	78	29	20	75	32	24	75	24	17	73	22	14
2-METHYL-4,6-DINITROPHENOL	71	46	36	71	52	39	87	47	21	87	45	16
2-NITROPHENOL	106	29	18	95	26	21	96	28	17	91	35	16
2,4-DICHLOROPHENOL	87	22	16	83	25	20	89	23	14	82	24	17
2,4-DIMETHYLPHENOL	75	24	18	59	41	25	64	40	29	51	59	29
2,4-DINITROPHENOL	54	91	42	50	74	45	71	68	30	70	68	34
2,4,6-TRICHLOROPHENOL	91	24	18	89	21	20	88	29	16	83	25	12
4-CHLORO-3-METHYLPHENOL	84	31	24	78	29	20	81	30	18	77	29	16
4-NITROPHENOL	60	49	42	54	48	33	59	48	30	59	48	38

The mean recovery statistics (at 100 µg/L) for the acid compounds range from 44% for phenol to 106% for 2-nitrophenol with an average value of 74%. These extremes are for the distilled water matrix. One-half of the mean recoveries for the acid compounds are between 59% and 87%, with one-fourth of the mean recoveries above and below these values. Recoveries for 2-nitrophenol are very good for all water matrices with mean recoveries ranging from 91% to 106%. Mean recoveries for phenol and 4-nitrophenol are consistently low (probably due to loss of these compounds into the B/N fraction) with recoveries ranging from 44% to 48% and 54% to 60%, respectively. The phthalates, particularly dimethyl and diethyl phthalate, may have hydrolyzed when the water samples were made basic for the B/N extraction, thus contributing to low recovery. In general, one would expect the lower molecular weight phthalate esters to hydrolyze more rapidly than the higher molecular weight esters. The data in Table 2-1 tend to show this trend. The high overall recoveries for isophorone could be partially due to the poor chromatography of this compound on the packed GC column, contributing to nonlinear response in the mass spectrometer.

The overall standard deviation of the analytical results is an indication of the precision associated with the measurement generated by a group of laboratories. The percent relative standard deviation (RSD) at 100 µg/L for the B/N compounds range from 10% for phenanthrene in the tap water matrix to 104% for dimethyl phthalate in the surface water matrix with a median value of 35%. Precision for dimethyl phthalate is poor for all water matrices with RSDs ranging from 88% to 104%. One-half of the RSDs for the B/N compounds are between 26% and 52%. In 95% of the cases, the RSDs are less than 76%.

The RSDs (at 100 µg/L) for the acid compounds range from 21% for 2,4,6-trichlorophenol in the tap water matrix to 91% for 2,4-dinitrophenol in the distilled water matrix with a median RSD of 32%. Precision for 2,4-dinitrophenol is poor for all water matrices with RSDs ranging from 68% to 91%. One-half of the RSDs for the acid compounds are between 27% and 47%. In 95% of the cases the RSDs are less than 73%.

The percent relative standard deviation for a single analyst (RSD-SA) indicates the precision associated with a single laboratory. The RSD-SA for B/N samples at 100 µg/L ranges from 8% for 2-chloronaphthalene in the distilled water matrix to 72% for dimethyl phthalate in the surface water matrix, with a median RSD-SA of 24%. With the exception of the tap water matrix, single-analyst precision for dimethyl phthalate is poor with RSD-SAs ranging from 55% to 72%. One-half of the RSD-SAs for the B/N compounds at 100 µg/L are between 18% and 34%. In 95% of the cases, the RSD-SAs are less than 51%.

The RSD-SAs (at 100 µg/L) for the acid compounds range from 12% for 2,4,6-trichlorophenol in the industrial effluent matrix to 45% for 2,4-dinitrophenol in the tap water matrix with a median RSD-SA of 21%. One-half of the RSD-SAs for the acid compounds are between 17% and 30%. In 95% of the cases, the RSD-SAs are less than 43%.

The effect of water type was different for the various B/N and acid compounds. For most compounds, the water matrix does not have a great effect on either the accuracy or precision. Over all, recoveries for the B/N compounds averaged 81% in distilled water, 74% in tap water, 71% in surface water, and 69% in the industrial effluent matrix. Recoveries for the acid compounds averaged 77% in distilled water, 71% in tap water, 77% in surface water, and 72% in the industrial effluent. Precision

(RSD and RSD-SA) for the B/N compounds tended to be worse for the surface water and industrial effluent (median RSD = 38% and median RSD-SA = 28%) than the distilled and tap water (median RSD = 32% and median RSD-SA = 22%). Precision for the acid compounds tended to be worse for the tap water (median RSD = 41% and median RSD-SA = 25%) than for the distilled water, surface water and industrial effluent (median RSD = 32% and median RSD-SA = 19%).

In order to examine the relationship between surrogate and spike recoveries, surrogate recoveries were correlated with the recoveries for each priority pollutant in the appropriate fraction. Potential outliers were not discarded from the recovery data. Approximately 350 data pairs were used to calculate each of the coefficients.

The analysis of the surrogate recovery data from the interlaboratory study do not indicate strong relationships between the recoveries of the surrogates and the recoveries of the compounds of interest. A surrogate was identified for only three B/N compounds (benzo(a)pyrene, dibenzo(a,h) anthracene, and hexachlorobenzene) and one acid compound (2,4-dimethyl phenol) which could explain greater than 50% of the variation in the recoveries of the compounds. These results do not imply that surrogate/compound relationships do not exist. The variation of the test methods (coefficient of variations generally greater than 20%) make it difficult to observe surrogate relationships within a "narrow" range of recoveries.

For B/N compounds eluting up to 20.1 minutes (hexachlorobenzene), 2-fluorobiphenyl and 1-fluoronaphthalene tend to have the highest correlation coefficient. For compounds eluting after 20.1 minutes, benzo(g,h,i)perylene-$^{13}C_{12}$ and 4,4'-dibromooctafluorobiphenyl generally have the highest correlation coefficients.

For the acid compounds, 2,4-dimethylphenol has the highest correlation coefficient for six of the compounds and phenol-d_6 has the highest coefficient for four of the compounds. 2-Fluorophenol has positive correlation coefficients (ranging from 0.07 to 0.38) with all of the acid compounds.

Further investigations of various statistical approaches will be implemented and will be reported in a separate report at a later time.

The major problem encountered by the participating laboratories was poor resolution of compounds including 1,3- and 1,4-dichlorobenzene, fluorene and 2,4-dinitrotoluene, acenaphthene and acenaphthylene, the benzofluoranthene isomers, chrysene and benzoanthracene, and phenanthrene and anthracene. This, along with poor chromatography for acidic compounds, led to problems in peak identification. Some difficulties in obtaining linear calibration curves and consistent RF values were also encountered for compounds such as nitrophenols and the benzidines.

SECTION 3

RECOMMENDATIONS

It is highly recommended that the column be checked for resolution of compounds, peak geometry (tailing), and total response of the compound. An improperly performing column can lead to problems of misidentification and poor accuracy and precision of the reported values. Suggested compounds for checking the column include: 1,3-dichlorobenzene (7.4 min) and 1,4-dichlorobenzene (7.8 min) for the early eluters, acenaphthylene (17.4 min) and acenaphthene (17.8 min) for the middle eluters; and chrysene (31.5 min) and di-n-octylphthalate (32.5 min) for the late eluting compounds. For the acids, 2,4-dinitrophenol (15.9 min) and 2-methyl-4,6-dinitrophenol (16.2 min) are suggested.

Excessive tailing may be minimized by coating all contact surfaces with phosphoric acid or a weak organic acid.

Some laboratories reported problems with nonlinearity and poor response with the following compounds: nitrophenols, pentachlorophenol, aldrin, DDT, DDD, DDE and BHC isomers. It is recommended that the analyst have one of the standards used for the standard curve be close in response to the sample response.

It is recommended that the retention times be checked, especially for the highly polar compounds, by frequent use of standards. Multiple internal standards, such as deuterated naphthalene, phenanthene, and chrysene, were recommended by several of the participating laboratories.

It is recommended that a pure DDT standard be used to detect possible degradation of DDT to DDD or DDE.

It is suspected that the low molecular weight phthalate esters may hydrolyze under basic conditions used in the extraction procedure. It is recommended that this step be performed as quickly as possible.

SECTION 4

DESCRIPTION OF STUDY

The design of the interlaboratory study of Method 625 was based on the technique described by W. J. Youden [2]. According to this technique, samples are prepared in pairs at several levels of concentration where the concentration of each analyte in a sample pair is slightly different. The analyst is directed to perform a single analysis and report one value for each analyte in the sample.

Sample pairs for each method were prepared at low, medium and high levels within the linear range of the mass spectrometer and constituted three Youden pairs. However, because of the number of analytes present, the B/N containing ampules were divided into two groups of three pairs for a total of 12 separate B/N ampules.

The samples were prepared as concentrates in sealed ampules and shipped to the participating laboratories. Each laboratory was responsible for supplying laboratory pure water, finished drinking water, a surface water, and an industrial or municipal effluent water for use in the study. The analyst was required to add an aliquot of each concentrate to a volume of water from each of the four water types and subsequently to analyze the spiked water samples.

In addition to the sample ampules, an industrial effluent water selected by Radian was furnished to each participating laboratory for analysis. This sample was known to contain a number of the

priority pollutants and was judged to be difficult to analyze. The purpose of the industrial effluent sample was to evaluate Method 625 on false positive and false negative results.

After all analyses were completed, the results were subjected to statistical analysis using EPA's IMVS computer programs to determine the precision and accuracy of Method 625.

TEST DESIGN

The following is a summary of the test design used based on Youden's nonreplicate technique for samples.

1. Three Youden pairs of samples were analyzed for each analyte with the deviation from the mean of each pair being at least 5% but not more than 20%. The three pairs were spread over a usable and realistic range such that the lowest pair was somewhat above the minimum detection limit and all concentrations were within the linear range of the method.

2. The spiking samples were supplied as liquid concentrates in organic solvents sealed in glass ampules. Sufficient sample was provided to allow withdrawal of the appropriate amount of solution to spike one water sample from each ampule.

3. Forty-eight B/N ampules were provided to each of the 15 laboratories. The B/N and pesticide extractable analytes were divided into two sets of three pairs each for the four types of water analyzed. Twenty-four acid ampules were provided, each containing the 11 acid compounds.

4. The participants spiked the concentrates into reagent water, drinking water, surface water, and effluent waste water. Also, Radian supplied an industrial effluent which was used solely for the determination of false positive and false negative results. This sample was analyzed without addition of analyte concentrates.

5. Each of the 15 participating laboratories was furnished with the following materials:

   - Four Youden pair ampules of each of three concentration levels for the acids, B/N group 1, and B/N group 2. (A total of 72 spiking sample ampules.)

   - Sufficient surrogate standard solution to incorporate into analyses of all samples and blanks as described in Method 625.

   - A 1 liter sample of an industrial effluent to be analyzed without addition of spiking sample.

   - A set of instructions detailing the method for spiking the samples and the order in which samples were to be run.

   - Copies of Method 625.

   - A questionnaire covering difficulties encountered with the method and suggestions for improvement.

- Data report forms to be completed and returned to Radian.

SELECTION OF PARTICIPATING LABORATORIES

Laboratories were invited to submit bids to participate in the study through announcements placed in Commerce Business Daily, Analytical Chemistry, and Environmental Science and Technology. Approximately 80 responses were received. Of these respondents, 34 cost bids were obtained from which 15 laboratories were selected. Selection was based on the experience, qualifications, facilities, quality control plans, and cost estimates received from the laboratories. Final selection was also dependent on the laboratories successfully analyzing the performance evaluation samples prepared by Radian.

The laboratories selected for participation are given in Table 3. The laboratories numbers used in the reports do not reflect this order.

PREPARATION OF YOUDEN PAIR CONCENTRATES

The Youden pair solutions for the B/Ns and acids were prepared by accurately weighing the pure standard compounds into volumetric flasks and dissolving in acetone. The pure materials were obtained from EPA's Repository for Toxic and Hazardous Materials which was maintained by Radian at that time.

Several stock solutions were prepared for each class of compounds. Each compound was weighed only once. A portion of each stock solution was then diluted by addition of fresh solvent. The diluted and undiluted stock solutions were aliquoted and further diluted to give various concentrations of the individual analytes in each Youden pair.

TABLE 3. FIFTEEN LABORATORIES SELECTED FOR PARTICIPATION IN THE METHOD 625 INTERLABORATORY STUDY

Laboratory
Acurex Corporation
California Analytical Laboratories, Inc.
Envirodyne
Environmental Research Group, Inc.
Environmental Science and Engineering, Inc.
Foremost-McKesson
GCA Corporation
Mead CompuChem
Pedco
Rockwell International
Rocky Mountain Analytical
Spectrix
Stewart Labs
The University of Utah Research Institute
West Coast Technical Service, Inc.

The surrogate standards and prestudy test sample solutions were prepared by dissolving weighed standards into volumetric flasks and diluting to volume with acetone.

When diluted to volume with test water according to instructions by each participating laboratory, the calculated concentrations of the various analytes in the diluted samples in µg/L are given in Tables 4 through 7. These values are based on the weighed amounts of the individual analytes.

As shown in Table 5, corrections in sample concentrations were made for 4,4'-DDT to compensate for impurities. The lot of 4,4'-DDT used for ampule preparation was determined to be 80% pure by purity assay using gas chromatography with flame ionization detection.

VERITY, HOMOGENEITY, AND STABILITY OF PREPARED AMPULES

For the verity study and homogeneity study, Radian analyzed three ampules in duplicate for each of the six concentrates. These ampules were collected early, middle, and late during the filling and sealing operation. For the stability study, only one concentration of the middle Youden pair was analyzed by Radian at both 45 and 90 days. Examination of the data indicated a few compounds which were outside of ±10% of the true value. At this time the Quality Assurance Branch, EMSL-Cincinnati, analyzed the samples. In general, according to EMSL-Cincinnati, the studies indicated that the true values were correct and that the ampules were homogeneous and stable. Two exceptions in the acid fraction occurred. For details see page 200 - Revised Equations.

PROOF OF FEASIBILITY OF THE STUDY PLAN

To prove the feasibility of the mixture of analytes in the ampules, Radian analyzed the Youden pairs by spiking them into laboratory pure water and performing the analyses according to the instructions provided to the participants. Chromatograms for Radian's analyses for the B/N and acid compounds are shown in Appendix B.

In general, the results were good with a few exceptions. Diethyl and dimethyl phthalate showed low recovery, probably due to hydrolysis during sample extraction. The low recoveries for delta-BHC and dibenzo(a,h)anthracene were also probably related to losses during sample handling. The low recoveries for 2,4-dimethylphenol are probably due to some of this compound being lost into the B/N fraction.

TABLE 4. SPIKED TEST SAMPLE CONCENTRATION OF B/N STANDARD 1

Compound	Youden Pair					
	High (Pair 1)		Middle (Pair 2)		Low (Pair 3)	
	1	2	1	2	1	2
Endosulfan sulfate	750	675	101	112	14	15
PCB 1260	667	600	100	90	40	36
β-BHC	750	675	101	112	14	15
4,4'-DDE	750	675	101	112	14	15
3,3'-Dichlorobenzidine	667	600	100	90	40	36
2,6-Dinitrotoluene	600	540	81	90	11	12
Heptachlor	600	540	81	90	11	12
bis(2-Chloroethyl)ether	750	675	101	112	14	15
Aldrin	600	540	81	90	11	12
Benzo(a)anthracene	400	360	59	55	20	18
4-Chlorophenyl phenyl ether	500	450	68	75	9	10
Benzo(b)fluoranthene	600	540	81	90	11	12
Benzo(a)pyrene	540	600	90	81	5	6
1,3-Dichlorobenzene	540	600	90	81	5	6
Diethyl phthalate	630	700	105	94	6	7
Hexachlorobenzene	510	535	80	76	6	7
Isophorone	540	600	90	81	5	6
Naphthalene	630	700	105	94	6	7
4,4'-DDD	400	360	54	60	7	8
Acenaphthene	400	360	54	60	7	8
Acenaphthylene	450	405	61	68	8	9
Anthracene	540	600	90	81	5	6
Dibenzo(a,h)anthracene	400	360	55	59	9	10
Di-n-butyl phthalate	630	700	105	94	6	7
Fluoranthene	630	700	105	94	6	7

TABLE 5. SPIKED TEST SAMPLE CONCENTRATION OF B/N STANDARD 2

Compound	Youden Pair					
	High (Pair 1)		Middle (Pair 2)		Low (Pair 3)	
	1	2	1	2	1	2
N-Nitrosodi-n-propyl amine	527	489	95	100	18	20
bis(2-Chloroisopropyl)ether	508	499	79	81	14	15
2,4-Dinitrotoluene	618	646	79	77	12	11
δ-BHC	511	547	60	57	8	7.2
Endrin aldehyde	658	611	119	125	22	25
4-Bromophenyl phenyl ether	512	548	60	57	8	7.2
Chrysene	384	411	45	43	6	5.4
1,2-Dichlorobenzene	384	411	45	43	6	5.4
1,4-Dichlorobenzene	617	646	79	77	12	11
Hexachlorobutadiene	640	685	75	71	10	9
Hexachloroethane	448	480	52	49	7	6.3
Benzo(g,h,i)perylene	278	292	74	56	7.4	11
Nitrobenzene	639	685	75	71	10	9
bis(2-Chloroethoxy)methane	617	646	79	77	12	11
Indeno(1,2,3-c,d)pyrene	278	292	74	56	7.4	11
1,2,4-Trichlorobenzene	591	622	74	72	11	10
4,4'-DDT (see below)	640	685	75	71	10	9
Dieldrin	512	548	60	57	8	7.2
Heptachlor epoxide	512	548	60	57	8	7.2
Phenanthrene	640	685	75	71	10	9
Benzo(k)fluoranthene	512	548	60	57	8	7.2
Butyl benzyl phthalate	512	548	60	57	8	7.2
bis(2-Ethylhexyl) phthalate	512	548	60	57	8	7.2
2-Chloronaphthalene	320	342	38	36	5	4.5
Dimethyl phthalate	320	343	38	36	5	4.5
Di-n-octyl phthalate	512	548	60	57	8	7.2
Fluorene	384	411	45	43	6	5.4
Pyrene	320	343	38	36	5	4.5
4,4'-DDT*	512*	548*	60*	57*	8*	7*

*Actual concentration after correction for 80% purity of solute.

TABLE 6. SPIKED TEST SAMPLE CONCENTRATION OF ACID STANDARD

Compound	Youden Pair					
	High (Pair 1)		Middle (Pair 2)		Low (Pair 3)	
	1	2	1	2	1	2
2,4-Dinitrophenol	1333	1200	200	180	100	90
4,6-Dinitro-o-cresol	1067	960	160	144	80	72
4-Nitrophenol	800	720	108	120	21.6	24
2-Nitrophenol	520	468	70	78	14	15.6
2,4,6-Trichlorophenol	440	396	59	66	11.9	13.2
Pentachlorophenol	480	432	65	72	13	14.4
2-Chlorophenol	480	533	80	72	7	8
Phenol	420	467	70	63	6	7
2,4-Dichlorophenol	540	600	90	81	8	9
2,4-Dimethylphenol	600	667	100	90	9	10
p-Chloro-m-cresol	600	667	100	90	9	10

TABLE 7. SPIKING CONCENTRATION OF SURROGATE COMPOUNDS

Compound	Prepared Concentration - µg/mL
Dimethylphthalate-d_6	100
2-Fluorobiphenyl	100
1-Fluoronaphthalene	100
Benzo(g,h,i)perylene-$^{13}C_{12}$	100
4,4'-Dibromooctafluorobiphenyl	100
Phenol-d_6	100
2,4-Dimethylphenol-3,4,6-d_3	100
Pentachlorophenol-$^{13}C_6$	100
2-Fluorophenol	100

SECTION 5

STATISTICAL TREATMENT OF DATA

Data obtained from the interlaboratory method validation study were subjected to statistical analyses employing US EPA's IMVS system of computer programs. This system of programs was designed to implement ASTM procedure D2777, "Standard Practice for Determination of Precision and Bias of Methods of Committee D-19 on Water" [3]. The analyses conducted using the IMVS system included tests for the rejection of outliers (both whole laboratories for a water-type and individual data points), estimation of mean recovery (accuracy), estimation of single-analyst and overall precision, and tests for the effects of water test on accuracy and precision.

Prior to employing the IMVS system, the interlaboratory method study data were reduced to a standard form and validated. Tables C-1 through C-192 in Appendix C present the standardized data from the 15 participating laboratories. All values shown in the tables have been corrected for the blank values presented in Tables C-193 through C-200. Corrected values less than zero and values reported as "not detected" or "detected, but the concentration could not be quantitated" are shown as zero. Values marked with an asterisk were rejected as outliers in the IMVS software tests presented in the next section.

Prior to formal analysis by the IMVS software, data were screened for incorrectly transcribed data values through the use of descriptive statistics (e.g., mean, standard deviation, coefficient of variation, extreme values), graphical aids (e.g.,

(e.g., scatter diagrams, frequency histograms) and visual scanning of the data base.

REJECTION OF OUTLIERS

An outlying observation, or "outlier," is a data point that appears to deviate markedly from other members of the group of values with which it is associated. Outlying data points are often encountered during interlaboratory test programs; if they are not removed, they can result in a distortion of the accuracy and precision statistics which characterize the analytical method. These outlying points should not be removed indiscriminantly, however, because they may represent an extreme manifestation of the random variability inherent in the method.

ASTM procedure E178-80, "Standard Practice for Dealing with Outlying Observations" [4] and ASTM procedure D2777-77 [3] present explicit statistical rules and methods for identification of outliers. The IMVS software was used to screen the B/N and acid data for outliers in accordance with ASTM D2777.

Data from outlying laboratories for a particular type were rejected employing Youden's laboratory ranking test procedure [2, 5] at the 5% level of significance. Data remaining after the laboratory ranking procedure were subjected to individual outlier tests. After all zero, missing, "detected, but could not be quantitated" and "nondetect" data were rejected as outliers, the remaining data were examined using the two-sided outlier rejection T-test constructed by Thompson [6]. All data rejected as outliers for this study are identified by an asterisk in the tables of data (Table C-1 to C-192, Appendix C). Of the 22,555 reported B/N and acid concentrations, 4,557 were deleted as outliers (approximately 20%).

Youden's Laboratory Ranking Procedure

Using the data for each water type, Youden's laboratory ranking test was performed at the 5% level of significance. The Youden laboratory ranking procedure requires a complete set of data from each laboratory within each water type, so that missing data had to be replaced. For each laboratory with missing data for a particular water and analyte, the natural logarithms of the available recovery data for that laboratory water and analyte were regressed against the natural logarithms of the related spiked ampule concentrations to find the line of best fit. Predicted log-recovery measurements were computed from the least-square regression equations by plugging in the known concentration for the missing value and the missing values were estimated by taking the exponential of these predicted values. (For complete details of this procedure, see reference 1.)

With a complete set of data, the laboratory ranking test was used to identify laboratories (for a particular water type) that were so consistently high or low that their results are unrepresentative of the method's capabilities (systematic bias).

Data from outlying laboratories were rejected at the 5% level of significance. When a laboratory was rejected, all the laboratory's data for that water type and analyte were flagged as outliers for further analyses. After ranking was complete, all estimated "missing values" were deleted from any further analyses.

Tests for Individual Outliers

The data remaining, after rejection of zero, missing, "detected, but could not be quantitated" and "nondetect" data, were subjected to an individual outlier test based on calculation of the T-value [3, 6].

In these calculations the mean recovery, $\bar{X}$, is given by

$$\bar{X} = \frac{1}{n} \sum_{i=1}^{n} X_i \qquad (1)$$

and the standard deviation, s, is given by

$$s = \sqrt{\frac{1}{n-1} \sum_{i=1}^{n} (X_i - \bar{X})^2} \qquad (2)$$

where X_i = individual analyses

n = number of retained analyses values in the ampul set

The outliers may be rejected if the value of T_i defined by

$$T_i = \frac{X_e - \bar{X}}{s} \qquad (3)$$

exceeds the critical value of the Thompson's T (two-sided at 5% significance level). In the equation, X_e represents the value farthest away from the mean $\bar{X}$ of this set of retained data. If the extreme value is rejected as an outlier, the test is repeated until the value being tested passes the test.

STATISTICAL SUMMARIES

After the outlier rejection tests were performed, the following summary statistics were calculated employing the remaining data for each ampule (single analyte, single concentration, single water matrix):

- Number of retained data points, n
- Mean recovery of retained data, $\bar{X}$

- Accuracy as a percent of relative error, % R.E.
- Overall absolute standard deviation, S
- Percent relative overall standard deviation, % RSD
- Absolute single-analyst standard deviation, S_r
- Percent relative standard deviation for a single analyst, % RSD-SA

All of these statistics, except the single-analyst absolute and relative standard deviations, were calculated using the retained data for each ampule. The basic statistical formulas used for these calculations are given below, where X_1, X_2, . . ., X_n denote the values for the n retained data points for a given ampule.

Mean Recovery ($\overline{X}$):

$$\overline{X} = \frac{1}{n} \sum_{i=1}^{n} X_i \qquad (4)$$

Accuracy as % Relative Error:

$$\% \text{ RE} = \frac{\overline{X} - \text{true value}}{\text{true value}} \times 100 \qquad (5)$$

Overall Standard Deviation:

$$S = \sqrt{\frac{1}{n-1} \sum_{i=1}^{n} (X_i - \overline{X})^2} \qquad (6)$$

and

Percent Relative Overall Standard Deviation:

$$\% \text{ RSD} = \frac{S}{\bar{X}} \times 100 \qquad (7)$$

The overall standard deviation, S, indicates the precision associated with measurements generated by a group of laboratories. This represents the broad variation in the data collected in a collaborative study. A measure of how well an individual laboratory can expect to perform in his own laboratory is another important measure of precision. This "single-analyst" precision, denoted by S_r, is measured by

$$S_r = \sqrt{\frac{1}{2(m-1)} \sum_{i=1}^{m} (D_i - \bar{D})^2} \qquad (8)$$

where m = number of retained Youden-paired observations

D_i = difference between observations in the ith pair

$\bar{D}$ = average of D_i values

The Youden-pair design employed in this study permits the calculation of this single-analyst precision without making duplicate measurements on the same sample. This helps to avoid the well-intentioned manipulation of data that can occur when laboratories make duplicate analyses.

The percent relative standard deviation for the single-analyst precision is calculated by

$$\% \text{ RSD-SA} = \frac{S_r}{\bar{X}^*} \times 100 \qquad (9)$$

where $\bar{X}^*$ is the average of the two mean recoveries corresponding to the two ampuls defining the particular Youden pair. These summary statistics are presented in Tables 8-1 through 8-64 for each of the 64 Method 625 compounds in the four water matrices.

REGRESSION ANALYSIS OF BASIC STATISTICS

These summary statistics provide detailed information on the accuracy and precision of the data obtained for each concentration level. One objective of the statistical analysis of the data is to summarize the information about accuracy and precision which is contained in the statistics.

It is often the case that a systematic relationship exists between the mean recovery ($\bar{X}$) and the true concentration level (C) of the analyte in the sample. In addition, there are often systematic relationships between the precision statistics (S and SR) and the mean recovery ($\bar{X}$). Usually these systematic relationships can be adequately approximated by a linear relationship (i.e. by a straight line). Once these straight lines are established, they can be used to conveniently summarize the behavior of the method within a water type, and they can aid in comparing the behavior of the method across water types. In addition they can be used to obtain estimates of the accuracy and precision at any concentration level within the applicable range studied. They can also be used to predict the behavior of the method when used under similar conditions. These important relationships are discussed below.

Statements of Method Accuracy

The accuracy of the method is characterized by the relationship of the mean recovery ($\bar{X}$) to the true concentration (C) of the analyte in the water sample. In order to obtain a mathematical expression for this relationship, a regression line of the form

TABLE 8-1

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR ACENAPHTHENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	12	10	11	13	14	13	13
TRUE CONC (C) UG/L	7.0	8.0	7.0	8.0	7.0	8.0	7.0	8.0
MEAN RECOVERY (X)	7.3	7.4	6.7	7.7	6.4	7.1	6.4	7.3
ACCURACY(%REL ERROR)	3.71	-7.76	-4.29	-4.26	-9.01	-10.63	-8.90	-8.37
OVERALL STD DEV (S)	1.1	0.8	1.3	1.3	1.7	2.0	1.3	2.0
OVERALL REL STD DEV, %	14.61	10.73	19.13	17.52	26.64	27.53	20.05	27.02
SINGLE STD DEV, (SR)	1.0		1.2		0.9		1.0	
ANALYST REL DEV, %	14.17		17.30		12.70		14.43	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	10	11	11	11	14	14	13	13
TRUE CONC (C) UG/L	54.0	60.0	54.0	60.0	54.0	60.0	54.0	60.0
MEAN RECOVERY (X)	54.7	60.5	53.3	57.9	54.8	54.3	48.1	52.2
ACCURACY(%REL ERROR)	1.30	0.76	-1.25	-3.49	1.47	-9.46	-10.93	-13.04
OVERALL STD DEV (S)	7.7	11.6	8.5	9.4	13.8	6.8	7.7	12.2
OVERALL REL STD DEV, %	14.03	19.11	15.89	16.27	25.17	12.48	16.02	23.38
SINGLE STD DEV, (SR)	7.2		4.9		10.3		4.9	
ANALYST REL DEV, %	12.56		8.85		18.81		9.83	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	12	11	10	14	13	11	14
TRUE CONC (C) UG/L	400.0	360.0	400.0	360.0	400.0	360.0	400.0	360.0
MEAN RECOVERY (X)	365.1	339.8	367.3	337.5	324.1	333.2	320.7	315.5
ACCURACY(%REL ERROR)	-8.72	-5.62	-8.18	-6.26	-18.97	-7.45	-19.82	-12.37
OVERALL STD DEV (S)	94.7	77.8	63.5	62.1	138.1	81.1	23.4	81.8
OVERALL REL STD DEV, %	25.94	22.90	17.28	18.40	42.61	24.34	7.30	25.92
SINGLE STD DEV, (SR)	62.8		38.2		74.2		60.9	
ANALYST REL DEV, %	17.81		10.85		22.58		19.15	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-2

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR ACENAPHTHYLENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	8	11	10	11	11	12	11	9
TRUE CONC (C) UG/L	8.0	9.0	8.0	9.0	8.0	9.0	8.0	9.0
MEAN RECOVERY (X)	7.7	9.0	7.6	7.9	8.0	8.9	7.2	7.5
ACCURACY(%REL ERROR)	-3.44	-0.35	-4.88	-11.92	-0.34	-0.93	-9.55	-16.30
OVERALL STD DEV (S)	1.5	1.6	1.4	1.9	2.1	3.1	1.4	1.3
OVERALL REL STD DEV, %	19.74	17.92	17.79	24.01	25.99	35.30	19.66	17.03
SINGLE STD DEV, (SR)	0.9		1.6		1.2		0.6	
ANALYST REL DEV, %	10.24		21.16		14.72		8.63	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	11	10	10	11	10	10	11	11
TRUE CONC (C) UG/L	61.0	68.0	61.0	68.0	61.0	68.0	61.0	68.0
MEAN RECOVERY (X)	51.6	66.8	59.6	63.6	59.6	68.5	56.0	56.8
ACCURACY(%REL ERROR)	-15.42	-1.80	-2.23	-6.50	-2.21	0.76	-8.14	-16.44
OVERALL STD DEV (S)	20.5	11.0	7.5	11.7	6.5	6.0	17.2	18.7
OVERALL REL STD DEV, %	39.82	16.51	12.60	18.48	10.87	8.69	30.64	32.97
SINGLE STD DEV, (SR)	18.2		7.2		4.1		5.2	
ANALYST REL DEV, %	30.74		11.61		6.47		9.19	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	11	11	12	11	12	10	10	10
TRUE CONC (C) UG/L	450.0	405.0	450.0	405.0	450.0	405.0	450.0	405.0
MEAN RECOVERY (X)	379.8	374.6	378.4	311.0	437.1	375.4	404.9	347.4
ACCURACY(%REL ERROR)	-15.60	-7.51	-15.90	-23.22	-2.86	-7.32	-10.03	-14.22
OVERALL STD DEV (S)	104.1	74.0	99.2	103.7	169.9	92.2	81.3	58.1
OVERALL REL STD DEV, %	27.41	19.77	26.20	33.35	38.87	24.55	20.09	16.72
SINGLE STD DEV, (SR)	61.0		70.4		84.1		59.1	
ANALYST REL DEV, %	16.16		20.44		20.71		15.71	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-3

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR ALDRIN ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	12	11	10	9	11	11	9
TRUE CONC (C) UG/L	11.0	12.0	11.0	12.0	11.0	12.0	11.0	12.0
MEAN RECOVERY (X)	10.2	10.9	7.2	10.0	6.7	7.9	5.7	8.2
ACCURACY(%REL ERROR)	-7.36	-9.41	-34.55	-17.04	-38.69	-33.86	-48.18	-31.57
OVERALL STD DEV (S)	5.1	6.3	2.0	4.4	2.7	2.8	3.0	5.6
OVERALL REL STD DEV, %	49.80	57.60	27.96	44.16	39.34	34.98	53.14	68.80
SINGLE STD DEV, (SR)	1.4		1.9		1.0		2.8	
ANALYST REL DEV, %	13.36		22.08		13.95		39.88	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	11	11	11	11	12	12	13	12
TRUE CONC (C) UG/L	81.0	90.0	81.0	90.0	81.0	90.0	81.0	90.0
MEAN RECOVERY (X)	65.3	77.5	56.2	54.0	41.7	51.6	42.3	39.6
ACCURACY(%REL ERROR)	-19.35	-13.94	-30.63	-39.95	-48.46	-42.63	-47.72	-55.98
OVERALL STD DEV (S)	33.8	28.7	27.4	27.0	18.6	30.3	27.1	25.5
OVERALL REL STD DEV, %	51.73	37.02	48.83	49.91	44.49	58.61	63.99	64.40
SINGLE STD DEV, (SR)	26.8		17.5		15.6		16.6	
ANALYST REL DEV, %	37.56		31.79		33.31		40.48	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	12	11	11	12	12	12	13
TRUE CONC (C) UG/L	600.0	540.0	600.0	540.0	600.0	540.0	600.0	540.0
MEAN RECOVERY (X)	444.5	405.2	439.0	334.9	295.8	338.3	395.1	253.3
ACCURACY(%REL ERROR)	-25.92	-24.96	-26.83	-37.99	-50.70	-37.36	-34.14	-53.09
OVERALL STD DEV (S)	205.5	162.8	184.2	137.4	147.6	165.9	211.4	134.9
OVERALL REL STD DEV, %	46.22	40.17	41.95	41.03	49.90	49.06	53.51	53.25
SINGLE STD DEV, (SR)	68.3		94.1		112.4		116.7	
ANALYST REL DEV, %	16.06		24.31		35.46		36.00	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-4

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR ANTHRACENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	11	11	12	12	12	12	12
TRUE CONC (C) UG/L	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
MEAN RECOVERY (X)	4.9	5.1	4.6	5.1	4.7	5.2	4.7	5.2
ACCURACY(%REL ERROR)	-1.00	-15.15	-7.53	-15.19	-5.50	-12.78	-6.33	-13.33
OVERALL STD DEV (S)	0.9	0.5	1.0	0.7	1.3	0.9	1.4	1.8
OVERALL REL STD DEV, %	18.74	9.56	21.73	14.73	27.42	16.66	29.95	33.88
SINGLE STD DEV, (SR)	0.7		0.6		0.9		0.8	
ANALYST REL DEV, %	14.33		12.15		18.29		16.16	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	10	12	12	12	12	12	13
TRUE CONC (C) UG/L	90.0	81.0	90.0	81.0	90.0	81.0	90.0	81.0
MEAN RECOVERY (X)	70.6	72.8	80.6	72.4	81.5	70.9	75.4	62.4
ACCURACY(%REL ERROR)	-21.53	-10.16	-10.49	-10.57	-9.41	-12.42	-16.20	-22.95
OVERALL STD DEV (S)	28.4	5.5	9.1	10.0	13.3	8.0	9.1	13.3
OVERALL REL STD DEV, %	40.17	7.51	11.25	13.87	16.31	11.32	12.09	21.35
SINGLE STD DEV, (SR)	16.1		6.4		9.0		8.1	
ANALYST REL DEV, %	22.45		8.33		11.81		11.81	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	12	11	11	12	12	12	13
TRUE CONC (C) UG/L	540.0	600.0	540.0	600.0	540.0	600.0	540.0	600.0
MEAN RECOVERY (X)	410.9	476.5	413.8	440.3	376.8	484.3	420.7	372.9
ACCURACY(%REL ERROR)	-23.91	-20.58	-23.38	-26.61	-30.22	-19.28	-22.09	-37.85
OVERALL STD DEV (S)	134.7	117.2	83.0	141.2	154.2	130.0	149.7	163.6
OVERALL REL STD DEV, %	32.77	24.60	20.06	32.08	40.91	26.84	35.58	43.88
SINGLE STD DEV, (SR)	83.6		91.9		99.8		83.2	
ANALYST REL DEV, %	18.83		21.52		23.18		20.96	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-5

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR B-BHC ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	13	12	12	12	11	11	11
TRUE CONC (C) UG/L	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0
MEAN RECOVERY (X)	11.4	12.1	10.1	12.3	10.7	11.5	10.5	12.0
ACCURACY(%REL ERROR)	-18.71	-19.38	-27.92	-17.78	-23.39	-23.27	-24.87	-19.76
OVERALL STD DEV (S)	1.6	1.9	1.9	1.5	2.4	2.1	2.6	2.4
OVERALL REL STD DEV, %	14.38	15.40	18.66	12.18	22.66	18.02	25.03	20.34
SINGLE STD DEV, (SR)	1.8		1.6		1.1		1.8	
ANALYST REL DEV, %	15.51		14.39		9.53		15.93	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	13	12	12	12	11	12	12
TRUE CONC (C) UG/L	101.0	112.0	101.0	112.0	101.0	112.0	101.0	112.0
MEAN RECOVERY (X)	85.8	99.2	89.0	91.7	85.9	93.4	86.4	86.2
ACCURACY(%REL ERROR)	-15.05	-11.45	-11.83	-18.14	-14.91	-16.65	-14.41	-23.03
OVERALL STD DEV (S)	12.4	23.2	16.5	13.3	16.1	14.8	20.0	27.8
OVERALL REL STD DEV, %	14.47	23.41	18.57	14.52	18.69	15.87	23.17	32.23
SINGLE STD DEV, (SR)	15.6		14.1		3.7		11.7	
ANALYST REL DEV, %	16.86		15.55		4.09		13.58	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	12	12	12	11	12	12
TRUE CONC (C) UG/L	750.0	675.0	750.0	675.0	750.0	675.0	750.0	675.0
MEAN RECOVERY (X)	587.8	648.7	584.7	499.7	553.2	531.9	632.3	574.5
ACCURACY(%REL ERROR)	-21.63	-3.89	-22.04	-25.96	-26.24	-21.20	-15.69	-14.88
OVERALL STD DEV (S)	211.1	264.4	156.7	134.1	192.7	116.4	154.7	122.4
OVERALL REL STD DEV, %	35.92	40.75	26.80	26.83	34.84	21.88	24.46	21.31
SINGLE STD DEV, (SR)	138.3		84.2		129.3		119.4	
ANALYST REL DEV, %	22.37		15.53		23.83		19.79	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-6

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR BENZO(A)ANTHRACENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	10	12	12	12	12	12	13
TRUE CONC (C) UG/L	20.0	18.0	20.0	18.0	20.0	18.0	20.0	18.0
MEAN RECOVERY (X)	17.7	14.6	18.4	15.2	14.7	12.6	12.4	11.3
ACCURACY(%REL ERROR)	-11.35	-19.00	-7.79	-15.46	-26.67	-30.23	-38.13	-37.31
OVERALL STD DEV (S)	4.0	3.4	9.0	5.4	4.7	3.7	5.0	6.3
OVERALL REL STD DEV, %	22.33	23.22	48.92	35.71	31.92	29.11	40.25	55.87
SINGLE STD DEV, (SR)	3.2		8.4		2.9		3.2	
ANALYST REL DEV, %	19.71		50.17		21.48		26.65	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	11	10	11	12	11	12	13	13
TRUE CONC (C) UG/L	59.0	55.0	59.0	55.0	59.0	55.0	59.0	55.0
MEAN RECOVERY (X)	48.7	51.2	42.1	41.4	41.1	34.5	32.3	26.3
ACCURACY(%REL ERROR)	-17.41	-6.82	-28.58	-24.73	-30.42	-37.29	-45.19	-52.22
OVERALL STD DEV (S)	18.7	10.3	10.6	14.0	9.4	16.4	16.6	14.5
OVERALL REL STD DEV, %	38.30	20.12	25.19	33.70	22.95	47.43	51.27	55.14
SINGLE STD DEV, (SR)	10.2		10.2		10.3		11.5	
ANALYST REL DEV, %	20.41		24.33		27.27		39.21	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	10	11	12	11	12	12	12	13
TRUE CONC (C) UG/L	400.0	360.0	400.0	360.0	400.0	360.0	400.0	360.0
MEAN RECOVERY (X)	324.9	335.7	373.4	280.1	263.6	297.9	309.8	228.4
ACCURACY(%REL ERROR)	-18.78	-6.76	-6.64	-22.20	-34.10	-17.24	-22.54	-36.55
OVERALL STD DEV (S)	60.7	91.9	78.5	93.9	92.7	105.0	147.0	131.0
OVERALL REL STD DEV, %	18.69	27.38	21.01	33.53	35.18	35.24	47.45	57.36
SINGLE STD DEV, (SR)	42.1		81.4		89.4		109.4	
ANALYST REL DEV, %	12.74		24.91		31.83		40.64	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-7

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR BENZO(A)PYRENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	9	11	9	12	11	11	10	10
TRUE CONC (C) UG/L	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
MEAN RECOVERY (X)	4.7	4.9	3.1	3.8	3.8	3.5	2.6	3.2
ACCURACY(%REL ERROR)	-6.89	-18.03	-37.78	-37.36	-24.18	-41.97	-48.80	-46.83
OVERALL STD DEV (S)	3.5	2.2	1.3	2.3	3.0	1.8	1.9	1.9
OVERALL REL STD DEV, %	74.81	44.43	40.89	60.23	79.61	51.34	75.37	58.64
SINGLE STD DEV, (SR)	1.5		1.5		2.2		1.0	
ANALYST REL DEV, %	31.42		42.94		59.30		36.05	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	11	13	13	12	11	12	11
TRUE CONC (C) UG/L	90.0	81.0	90.0	81.0	90.0	81.0	90.0	81.0
MEAN RECOVERY (X)	74.2	77.2	65.6	54.6	55.2	46.8	39.7	37.0
ACCURACY(%REL ERROR)	-17.51	-4.72	-27.16	-32.59	-38.66	-42.21	-55.91	-54.38
OVERALL STD DEV (S)	34.0	28.6	39.0	26.7	25.1	24.0	30.3	27.5
OVERALL REL STD DEV, %	45.80	37.10	59.44	48.92	45.43	51.31	76.42	74.49
SINGLE STD DEV, (SR)	26.6		29.2		22.1		19.2	
ANALYST REL DEV, %	35.09		48.67		43.36		50.13	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	11	12	12	13	12	12	11	12
TRUE CONC (C) UG/L	540.0	600.0	540.0	600.0	540.0	600.0	540.0	600.0
MEAN RECOVERY (X)	511.4	538.6	500.7	490.4	366.4	515.1	424.6	331.0
ACCURACY(%REL ERROR)	-5.29	-10.23	-7.27	-18.27	-32.15	-14.14	-21.38	-44.83
OVERALL STD DEV (S)	106.5	166.3	103.7	152.8	150.7	237.3	207.9	217.4
OVERALL REL STD DEV, %	20.83	30.88	20.71	31.17	41.14	46.06	48.97	65.69
SINGLE STD DEV, (SR)	55.7		90.5		160.4		119.7	
ANALYST REL DEV, %	10.61		18.26		36.39		31.70	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-8

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR BENZO(B)FLUORANTHENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	12	12	10	12	11	13	13	13
TRUE CONC (C) UG/L	11.0	12.0	11.0	12.0	11.0	12.0	11.0	12.0
MEAN RECOVERY (X)	9.2	8.4	5.5	7.5	6.2	6.4	5.4	6.6
ACCURACY(%REL ERROR)	-16.74	-29.86	-50.36	-37.08	-44.05	-46.67	-50.56	-44.68
OVERALL STD DEV (S)	3.9	3.0	3.1	4.9	3.4	3.5	3.7	3.3
OVERALL REL STD DEV, %	42.61	35.51	56.89	65.08	55.78	54.15	68.90	49.53
SINGLE STD DEV, (SR)	2.4		3.9		1.7		2.0	
ANALYST REL DEV, %	27.06		59.46		27.31		33.70	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	11	13	13	13	13	14	14
TRUE CONC (C) UG/L	81.0	90.0	81.0	90.0	81.0	90.0	81.0	90.0
MEAN RECOVERY (X)	70.5	86.1	56.6	47.3	46.8	51.0	38.3	42.8
ACCURACY(%REL ERROR)	-12.99	-4.38	-30.08	-47.49	-42.26	-43.37	-52.67	-52.47
OVERALL STD DEV (S)	33.8	24.7	35.5	25.1	20.2	24.5	25.5	30.6
OVERALL REL STD DEV, %	48.01	28.70	62.76	53.06	43.18	48.14	66.44	71.60
SINGLE STD DEV, (SR)	18.5		27.7		18.7		17.5	
ANALYST REL DEV, %	23.62		53.27		38.26		43.25	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	12	12	13	13	13	13	14
TRUE CONC (C) UG/L	600.0	540.0	600.0	540.0	600.0	540.0	600.0	540.0
MEAN RECOVERY (X)	561.0	490.4	496.4	375.0	377.7	442.0	406.7	303.5
ACCURACY(%REL ERROR)	-6.51	-9.19	-17.27	-30.56	-37.06	-18.15	-32.21	-43.79
OVERALL STD DEV (S)	160.1	70.3	156.1	134.9	169.5	161.1	202.8	197.5
OVERALL REL STD DEV, %	28.54	14.34	31.44	35.98	44.89	36.45	49.86	65.06
SINGLE STD DEV, (SR)	113.2		73.4		124.8		133.5	
ANALYST REL DEV, %	21.53		16.84		30.46		37.59	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-9

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR BIS(2-CHLOROETHYL)ETHER ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	8	9	9	9	11	9	12	11
TRUE CONC (C) UG/L	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0
MEAN RECOVERY (X)	11.5	10.1	9.6	10.6	12.2	11.4	11.6	13.4
ACCURACY(%REL ERROR)	-17.95	-32.67	-31.27	-29.44	-13.12	-24.22	-17.14	-10.91
OVERALL STD DEV (S)	2.3	5.2	4.9	4.0	5.9	3.1	3.3	7.3
OVERALL REL STD DEV, %	19.72	51.28	51.02	37.88	48.69	26.87	28.23	54.27
SINGLE STD DEV, (SR)	2.9		4.0		2.1		5.6	
ANALYST REL DEV, %	26.89		39.42		18.08		44.81	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	12	12	12	14	14	13	15
TRUE CONC (C) UG/L	101.0	112.0	101.0	112.0	101.0	112.0	101.0	112.0
MEAN RECOVERY (X)	80.7	107.9	91.5	94.6	95.7	102.6	93.2	95.9
ACCURACY(%REL ERROR)	-20.14	-3.66	-9.39	-15.52	-5.23	-8.37	-7.70	-14.33
OVERALL STD DEV (S)	34.3	15.4	14.1	34.0	24.0	26.1	19.9	41.6
OVERALL REL STD DEV, %	42.54	14.24	15.43	35.93	25.11	25.45	21.34	43.37
SINGLE STD DEV, (SR)	25.5		26.7		14.1		30.2	
ANALYST REL DEV, %	27.00		28.66		14.24		31.90	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	12	12	13	13	13	14
TRUE CONC (C) UG/L	750.0	675.0	750.0	675.0	750.0	675.0	750.0	675.0
MEAN RECOVERY (X)	674.4	510.4	662.9	548.0	598.1	607.0	702.3	602.9
ACCURACY(%REL ERROR)	-10.09	-24.39	-11.62	-18.82	-20.25	-10.08	-6.37	-10.68
OVERALL STD DEV (S)	292.0	214.6	172.2	184.8	300.1	154.2	198.6	263.7
OVERALL REL STD DEV, %	43.30	42.04	25.98	33.72	50.16	25.40	28.29	43.74
SINGLE STD DEV, (SR)	247.7		140.2		214.5		90.6	
ANALYST REL DEV, %	41.81		23.15		35.60		13.89	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 6-10

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

<< EPA METHOD 625 VALIDATION STUDY - B/W (1) >>

STATISTICAL SUMMARY FOR DI-N-BUTYLPHTHALATE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW TOUGH PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	11	11	11	11	11	11	11	11
TRUE CONC (C) UG/L	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
MEAN RECOVERY (A)	3.8	5.5	4.0	4.3	5.4	6.1	3.6	4.9
ACCURACY(SHEL ERROR)	-36.67	-21.98	-32.73	-38.05	-10.64	-12.97	-40.45	-29.61
OVERALL STD DEV (S)	1.8	3.3	1.2	1.4	3.0	2.6	1.4	2.3
OVERALL REL STD DEV, %	46.21	61.00	30.79	32.17	55.84	41.95	39.35	47.20
SINGLE STD DEV, (SR)	1.7		1.2		0.9		1.3	
ANALYST REL DEV, %	37.76		28.69		14.94		30.46	
MEDIUM TOUGH PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	12	12	12	13	13	13	11
TRUE CONC (C) UG/L	105.0	94.0	105.0	94.0	105.0	94.0	105.0	94.0
MEAN RECOVERY (A)	56.8	60.6	62.3	63.3	65.0	61.5	63.7	54.3
ACCURACY(SHEL ERROR)	-45.89	-35.54	-40.68	-32.62	-38.05	-34.55	-39.36	-42.24
OVERALL STD DEV (S)	27.3	23.7	22.1	24.0	21.5	15.8	27.7	21.4
OVERALL REL STD DEV, %	48.05	39.10	35.49	37.87	33.12	25.62	43.49	39.38
SINGLE STD DEV, (SR)	8.9		16.7		12.8		16.5	
ANALYST REL DEV, %	15.18		26.59		20.19		28.01	
HIGH TOUGH PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	14	14	12	12	13	13	13	14
TRUE CONC (C) UG/L	630.0	700.0	630.0	700.0	630.0	700.0	630.0	700.0
MEAN RECOVERY (A)	377.1	405.5	374.4	356.2	326.9	450.7	416.3	335.7
ACCURACY(SHEL ERROR)	-40.14	-42.07	-40.57	-49.11	-48.11	-35.62	-33.92	-52.04
OVERALL STD DEV (S)	133.0	129.9	117.0	117.4	144.6	160.2	204.3	175.6
OVERALL REL STD DEV, %	35.27	32.05	31.24	32.96	44.84	35.54	49.56	52.32
SINGLE STD DEV, (SR)	49.7		81.7		121.3		72.0	
ANALYST REL DEV, %	12.70		22.36		31.20		19.15	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-11

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR DIBENZO(A,H)ANTHRACENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	8	10	6	6	5	7	6	6
TRUE CONC (C) UG/L	9.0	10.0	9.0	10.0	9.0	10.0	9.0	10.0
MEAN RECOVERY (X)	18.0	7.1	3.0	4.4	5.6	3.8	3.6	4.0
ACCURACY(REL ERROR)	99.58	-29.45	-66.67	-56.42	-37.33	-61.57	-59.81	-60.17
OVERALL STD DEV (S)	18.0	3.4	2.0	0.7	2.8	2.1	2.9	2.4
OVERALL REL STD DEV, %	100.04	48.35	67.20	15.36	49.84	54.64	79.01	59.99
SINGLE STD DEV, (SR)	12.4		1.5		1.7		0.9	
ANALYST REL DEV, %	98.85		40.75		36.25		23.63	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	11	11	12	13	11	10	13	14
TRUE CONC (C) UG/L	55.0	59.0	55.0	59.0	55.0	59.0	55.0	59.0
MEAN RECOVERY (X)	45.4	58.0	29.5	31.1	19.4	27.8	22.0	21.0
ACCURACY(REL ERROR)	-17.45	-1.61	-46.41	-47.22	-64.68	-52.86	-60.04	-64.33
OVERALL STD DEV (S)	30.0	22.9	16.3	24.5	10.4	15.0	21.0	22.4
OVERALL REL STD DEV, %	66.13	39.38	55.42	78.57	53.32	53.81	95.47	106.24
SINGLE STD DEV, (SR)	22.5		17.5		9.1		11.4	
ANALYST REL DEV, %	43.58		57.72		38.58		53.01	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	11	14	13	10	11	13	13
TRUE CONC (C) UG/L	400.0	360.0	400.0	360.0	400.0	360.0	400.0	360.0
MEAN RECOVERY (X)	427.5	313.2	463.0	326.4	274.8	334.4	351.7	267.5
ACCURACY(REL ERROR)	6.87	-13.01	15.74	-9.33	-31.29	-7.11	-12.08	-25.69
OVERALL STD DEV (S)	201.9	181.6	215.8	164.6	110.9	188.3	250.0	193.9
OVERALL REL STD DEV, %	47.22	57.98	46.62	50.42	40.36	56.32	71.09	72.47
SINGLE STD DEV, (SR)	129.1		84.3		108.5		111.4	
ANALYST REL DEV, %	34.86		21.36		35.63		35.99	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-12

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR DIETHYL PHTHALATE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	7	11	11	11	10	12	11	9
TRUE CONC (C) UG/L	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
MEAN RECOVERY (X)	3.3	4.5	3.2	3.1	4.7	4.3	3.1	3.9
ACCURACY(IREL ERROR)	-44.52	-36.30	-47.12	-55.45	-21.17	-38.81	-47.58	-44.60
OVERALL STD DEV (S)	1.8	2.7	2.2	1.5	3.2	2.3	1.7	1.9
OVERALL REL STD DEV, %	54.51	60.21	68.46	48.93	67.09	53.38	52.61	48.72
SINGLE STD DEV, (SR)	2.5		1.2		2.6		1.1	
ANALYST REL DEV, %	64.45		38.17		57.41		31.62	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	12	14	14	13	13	12	11
TRUE CONC (C) UG/L	105.0	94.0	105.0	94.0	105.0	94.0	105.0	94.0
MEAN RECOVERY (X)	37.7	43.0	44.2	47.6	52.3	51.1	63.8	50.1
ACCURACY(IREL ERROR)	-64.13	-54.24	-57.93	-49.37	-50.19	-45.61	-39.21	-46.72
OVERALL STD DEV (S)	23.7	23.8	29.2	29.1	29.0	24.3	26.2	24.0
OVERALL REL STD DEV, %	62.81	55.37	66.17	61.06	55.38	47.52	41.10	47.86
SINGLE STD DEV, (SR)	15.3		12.5		20.4		19.7	
ANALYST REL DEV, %	38.03		27.15		39.39		34.53	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	14	14	13	13	11	12
TRUE CONC (C) UG/L	630.0	700.0	630.0	700.0	630.0	700.0	630.0	700.0
MEAN RECOVERY (X)	280.2	341.9	292.4	254.6	242.8	448.6	408.9	332.1
ACCURACY(IREL ERROR)	-55.53	-51.15	-53.59	-63.63	-61.47	-35.91	-35.09	-52.55
OVERALL STD DEV (S)	139.6	136.7	151.9	200.7	153.9	161.8	166.9	170.5
OVERALL REL STD DEV, %	49.84	39.97	51.95	78.82	63.38	36.06	40.81	51.34
SINGLE STD DEV, (SR)	70.4		112.2		147.4		117.2	
ANALYST REL DEV, %	22.62		41.02		42.65		31.62	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-13

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR ENDOSULFAN SULFATE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	3	6	9	7	6	8	6	7
TRUE CONC (C) UG/L	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0
MEAN RECOVERY (X)	4.1	8.3	3.8	6.2	6.8	7.4	4.3	5.1
ACCURACY(%REL ERROR)	-70.48	-44.89	-72.94	-58.62	-51.31	-50.83	-68.93	-66.10
OVERALL STD DEV (S)	0.9	7.0	2.3	2.5	0.8	3.8	2.9	3.0
OVERALL REL STD DEV, %	21.68	84.20	59.60	39.55	11.49	52.10	65.74	59.43
SINGLE STD DEV, (SR)	3.3		2.3		0.8		1.6	
ANALYST REL DEV, %	53.08		45.98		10.62		34.30	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	7	6	10	9	9	10	10	10
TRUE CONC (C) UG/L	101.0	112.0	101.0	112.0	101.0	112.0	101.0	112.0
MEAN RECOVERY (X)	35.1	48.2	70.3	67.4	64.2	75.0	61.9	69.8
ACCURACY(%REL ERROR)	-65.21	-56.96	-30.43	-39.83	-36.44	-33.00	-38.73	-37.64
OVERALL STD DEV (S)	25.1	23.7	51.1	39.4	38.9	46.7	36.2	55.0
OVERALL REL STD DEV, %	71.29	49.07	72.79	58.54	60.59	62.19	58.58	78.73
SINGLE STD DEV, (SR)	2.2		13.4		8.7		28.1	
ANALYST REL DEV, %	5.33		19.43		12.46		42.63	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	7	7	10	9	10	9	10	10
TRUE CONC (C) UG/L	750.0	675.0	750.0	675.0	750.0	675.0	750.0	675.0
MEAN RECOVERY (X)	218.1	329.6	527.1	403.6	421.7	415.8	473.3	425.2
ACCURACY(%REL ERROR)	-70.92	-51.18	-29.71	-40.20	-43.77	-38.40	-36.89	-37.01
OVERALL STD DEV (S)	119.3	183.3	356.0	275.6	275.7	286.8	374.3	266.1
OVERALL REL STD DEV, %	54.69	55.62	67.53	68.29	65.37	68.98	79.08	62.58
SINGLE STD DEV, (SR)	63.5		107.4		123.4		163.3	
ANALYST REL DEV, %	23.18		23.07		29.48		36.35	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-14

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR FLUORANTHENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	11	13	12	13	11	12	11	12
TRUE CONC (C) UG/L	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
MEAN RECOVERY (X)	6.1	6.5	5.5	5.9	5.6	5.7	5.1	6.9
ACCURACY(%REL ERROR)	2.27	-7.31	-8.33	-15.16	-6.36	-17.86	-15.76	-1.07
OVERALL STD DEV (S)	1.3	1.0	1.1	1.7	1.0	1.0	1.5	3.7
OVERALL REL STD DEV, %	21.56	16.04	20.64	28.13	18.51	17.13	29.98	53.35
SINGLE STD DEV, (SR)	0.7		1.7		0.6		1.9	
ANALYST REL DEV, %	10.65		28.86		10.87		31.76	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	11	12	12	12	12	12	12
TRUE CONC (C) UG/L	105.0	94.0	105.0	94.0	105.0	94.0	105.0	94.0
MEAN RECOVERY (X)	85.9	87.3	89.0	84.8	89.6	76.7	79.5	69.5
ACCURACY(%REL ERROR)	-18.18	-7.11	-15.24	-9.73	-14.64	-18.40	-24.32	-26.02
OVERALL STD DEV (S)	33.6	9.7	8.3	10.5	17.4	9.7	19.9	20.3
OVERALL REL STD DEV, %	39.06	11.07	9.30	12.35	19.40	12.63	25.00	29.18
SINGLE STD DEV, (SR)	20.7		6.6		10.1		14.3	
ANALYST REL DEV, %	23.94		7.58		12.11		19.22	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	13	13	12	12	11	12
TRUE CONC (C) UG/L	630.0	700.0	630.0	700.0	630.0	700.0	630.0	700.0
MEAN RECOVERY (X)	462.4	560.0	451.6	425.7	364.9	446.3	430.3	384.0
ACCURACY(%REL ERROR)	-26.60	-20.00	-28.31	-39.19	-42.08	-36.24	-31.70	-45.14
OVERALL STD DEV (S)	139.4	172.8	117.4	160.4	125.4	198.1	175.8	175.0
OVERALL REL STD DEV, %	30.15	30.85	25.99	37.68	34.38	44.39	40.87	45.57
SINGLE STD DEV, (SR)	101.6		79.3		128.2		84.8	
ANALYST REL DEV, %	19.88		18.08		31.61		20.82	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-15

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR HEPTACHLOR ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	13	11	12	9	10	11	11
TRUE CONC (C) UG/L	11.0	12.0	11.0	12.0	11.0	12.0	11.0	12.0
MEAN RECOVERY (X)	7.1	7.0	6.1	6.1	6.6	6.1	5.7	7.4
ACCURACY(%REL ERROR)	-35.18	-41.35	-44.13	-49.03	-39.90	-49.33	-48.43	-38.71
OVERALL STD DEV (S)	4.0	2.7	1.8	3.3	1.9	2.1	2.8	3.9
OVERALL REL STD DEV, %	56.26	38.82	29.24	53.50	28.02	34.21	48.57	53.12
SINGLE STD DEV, (SR)	1.1		1.5		0.7		1.6	
ANALYST REL DEV, %	15.78		24.84		11.27		24.35	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	11	12	13	13	12	13	12	13
TRUE CONC (C) UG/L	81.0	90.0	81.0	90.0	81.0	90.0	81.0	90.0
MEAN RECOVERY (X)	57.8	71.8	59.9	51.1	56.9	51.7	50.1	50.1
ACCURACY(%REL ERROR)	-28.64	-20.19	-26.04	-43.20	-29.72	-42.58	-38.13	-44.38
OVERALL STD DEV (S)	32.0	27.5	29.4	18.9	25.8	20.7	19.5	26.5
OVERALL REL STD DEV, %	55.28	38.25	49.14	36.88	45.37	39.98	38.92	52.91
SINGLE STD DEV, (SR)	17.7		23.1		20.2		16.8	
ANALYST REL DEV, %	27.31		41.59		37.25		33.64	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	12	12	12	13	12	13	13
TRUE CONC (C) UG/L	600.0	540.0	600.0	540.0	600.0	540.0	600.0	540.0
MEAN RECOVERY (X)	554.9	509.7	492.8	392.4	520.9	381.4	498.6	351.0
ACCURACY(%REL ERROR)	-7.51	-5.60	-17.86	-27.33	-13.18	-29.38	-16.90	-35.00
OVERALL STD DEV (S)	330.0	241.4	215.9	178.0	368.6	141.4	254.1	179.8
OVERALL REL STD DEV, %	59.47	47.36	43.80	45.36	70.76	37.08	50.97	51.21
SINGLE STD DEV, (SR)	108.5		136.5		162.0		174.2	
ANALYST REL DEV, %	20.39		30.85		35.90		41.00	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-16

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR HEXACHLOROBENZENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	11	13	10	11	10	12	9	10
TRUE CONC (C) UG/L	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
MEAN RECOVERY (X)	5.5	5.3	4.5	5.2	4.7	5.6	4.0	3.8
ACCURACY(%REL ERROR)	-8.64	-23.90	-25.00	-26.23	-22.17	-20.36	-32.78	-45.14
OVERALL STD DEV (S)	2.1	1.5	1.8	1.4	1.4	1.4	0.8	1.2
OVERALL REL STD DEV, %	38.39	28.23	39.86	27.89	29.76	25.37	18.88	31.28
SINGLE STD DEV, (SR)	0.9		1.4		0.7		0.8	
ANALYST REL DEV, %	16.27		28.37		13.55		20.53	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	13	11	11	11	12	11	10
TRUE CONC (C) UG/L	80.0	76.0	80.0	76.0	80.0	76.0	80.0	76.0
MEAN RECOVERY (X)	57.9	61.7	63.2	56.7	62.2	58.9	48.4	43.2
ACCURACY(%REL ERROR)	-27.57	-18.88	-20.97	-25.43	-22.25	-22.49	-39.47	-43.12
OVERALL STD DEV (S)	30.3	22.7	15.6	15.5	13.2	14.9	17.3	12.5
OVERALL REL STD DEV, %	52.37	36.84	24.66	27.41	21.22	25.28	35.72	28.95
SINGLE STD DEV, (SR)	11.8		12.1		7.8		10.1	
ANALYST REL DEV, %	19.80		20.12		12.85		22.02	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	14	14	11	11	12	12	10	11
TRUE CONC (C) UG/L	510.0	535.0	510.0	535.0	510.0	535.0	510.0	535.0
MEAN RECOVERY (X)	369.2	395.6	371.1	329.7	311.7	336.0	321.0	288.1
ACCURACY(%REL ERROR)	-27.61	-26.06	-27.24	-38.37	-38.87	-37.20	-37.06	-46.15
OVERALL STD DEV (S)	150.2	161.5	99.9	140.1	124.8	129.4	117.2	139.1
OVERALL REL STD DEV, %	40.68	40.82	26.91	42.49	40.04	38.52	36.52	48.28
SINGLE STD DEV, (SR)	63.5		103.8		102.3		40.0	
ANALYST REL DEV, %	16.60		29.64		31.59		13.12	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-17

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR ISOPHORONE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	7	8	8	11	9	8	11	8
TRUE CONC (C) UG/L	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
MEAN RECOVERY (X)	8.3	6.3	6.4	10.4	5.5	7.5	19.2	8.5
ACCURACY(%REL ERROR)	66.00	4.79	28.75	73.18	10.67	25.62	284.00	42.50
OVERALL STD DEV (S)	2.3	2.7	2.3	7.1	3.1	3.2	25.3	3.0
OVERALL REL STD DEV, %	27.85	43.24	35.50	68.73	55.76	43.05	131.56	35.29
SINGLE STD DEV, (SR)	2.7		2.3		2.7		2.6	
ANALYST REL DEV, %	37.18		27.00		40.96		18.62	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	10	10	14	12	11	11	12	11
TRUE CONC (C) UG/L	90.0	81.0	90.0	81.0	90.0	81.0	90.0	81.0
MEAN RECOVERY (X)	109.1	96.7	100.9	79.3	101.9	80.9	99.9	91.9
ACCURACY(%REL ERROR)	21.19	19.42	12.06	-2.13	13.21	-0.17	10.97	13.47
OVERALL STD DEV (S)	50.0	22.3	46.4	30.5	22.2	39.3	45.5	39.5
OVERALL REL STD DEV, %	45.81	23.04	46.02	38.51	21.77	48.62	45.57	43.00
SINGLE STD DEV, (SR)	28.7		29.8		17.4		35.5	
ANALYST REL DEV, %	27.91		33.05		19.03		36.99	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	11	11	12	14	10	11	10	10
TRUE CONC (C) UG/L	540.0	600.0	540.0	600.0	540.0	600.0	540.0	600.0
MEAN RECOVERY (X)	555.6	695.9	641.4	672.0	568.2	620.7	688.4	565.6
ACCURACY(%REL ERROR)	2.89	15.98	18.79	11.99	5.21	3.45	27.48	-5.74
OVERALL STD DEV (S)	165.8	247.7	314.7	432.6	271.2	167.3	381.4	243.3
OVERALL REL STD DEV, %	29.85	35.60	49.07	64.38	47.72	26.96	55.40	43.01
SINGLE STD DEV, (SR)	164.5		176.0		134.5		268.4	
ANALYST REL DEV, %	26.29		26.81		22.63		42.81	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-18

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR NAPHTHALENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	11	12	12	13	11	13	14	13
TRUE CONC (C) UG/L	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
MEAN RECOVERY (X)	6.5	6.4	6.0	6.5	6.3	6.6	6.1	6.5
ACCURACY(%REL ERROR)	8.33	-8.75	0.42	-7.64	4.24	-5.27	2.26	-7.47
OVERALL STD DEV (S)	1.4	1.1	1.0	1.4	1.7	1.7	1.6	1.6
OVERALL REL STD DEV, %	21.55	17.60	16.63	21.57	27.65	25.84	25.37	25.33
SINGLE STD DEV, (SR)	0.9		0.7		0.8		1.1	
ANALYST REL DEV, %	14.14		11.87		11.74		17.36	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	12	12	13	12	13	14	14
TRUE CONC (C) UG/L	105.0	94.0	105.0	94.0	105.0	94.0	105.0	94.0
MEAN RECOVERY (X)	78.4	82.3	90.6	82.0	87.0	77.6	78.8	68.4
ACCURACY(%REL ERROR)	-25.29	-12.48	-13.69	-12.76	-17.18	-17.48	-24.99	-27.18
OVERALL STD DEV (S)	36.1	15.9	15.6	15.8	10.7	11.4	22.3	21.3
OVERALL REL STD DEV, %	46.05	19.37	17.19	19.27	12.25	14.63	28.26	31.19
SINGLE STD DEV, (SR)	18.4		12.1		4.6		13.9	
ANALYST REL DEV, %	22.92		13.99		5.57		18.83	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	12	13	13	13	13	13	14
TRUE CONC (C) UG/L	630.0	700.0	630.0	700.0	630.0	700.0	630.0	700.0
MEAN RECOVERY (X)	481.3	495.0	462.3	462.7	438.6	578.0	470.2	425.7
ACCURACY(%REL ERROR)	-23.61	-29.29	-26.62	-33.90	-30.37	-17.43	-25.36	-39.18
OVERALL STD DEV (S)	156.5	109.0	116.7	153.3	185.4	218.6	168.9	151.1
OVERALL REL STD DEV, %	32.51	22.02	25.24	33.12	42.26	37.82	35.91	35.49
SINGLE STD DEV, (SR)	88.3		94.2		200.2		94.0	
ANALYST REL DEV, %	18.08		20.37		39.39		20.97	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-19

ENVI[illegible]ONITORING AND SUPPORT LABORATORY
OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR PCB-1260 ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	8	10	6	9	5	5	4	6
TRUE CONC (C) UG/L	40.0	36.0	40.0	36.0	40.0	36.0	40.0	36.0
MEAN RECOVERY (X)	21.7	17.1	8.0	11.8	9.7	6.3	4.2	6.6
ACCURACY(%REL ERROR)	-45.81	-52.58	-80.00	-67.18	-75.65	-82.44	-89.38	-81.57
OVERALL STD DEV (S)	9.9	10.6	8.6	9.3	2.8	4.2	1.2	5.7
OVERALL REL STD DEV, %	45.80	62.30	107.40	79.01	28.96	66.34	28.01	86.53
SINGLE STD DEV, (SR)	11.3		1.8		1.2		4.3	
ANALYST REL DEV, %	58.11		18.07		15.02		78.90	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	11	11	9	9	7	8	5	6
TRUE CONC (C) UG/L	100.0	90.0	100.0	90.0	100.0	90.0	100.0	90.0
MEAN RECOVERY (X)	75.2	68.5	45.4	29.2	31.9	30.7	34.7	20.9
ACCURACY(%REL ERROR)	-24.78	-23.91	-54.64	-67.57	-68.13	-65.85	-65.30	-76.74
OVERALL STD DEV (S)	30.0	22.7	33.5	22.0	13.8	19.9	21.6	5.1
OVERALL REL STD DEV, %	39.84	33.19	73.86	75.25	43.28	64.83	62.30	24.23
SINGLE STD DEV, (SR)	14.4		23.8		18.6		16.1	
ANALYST REL DEV, %	20.04		63.74		59.55		57.75	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	11	11	11	11	10	11	10
TRUE CONC (C) UG/L	667.0	600.0	667.0	600.0	667.0	600.0	667.0	600.0
MEAN RECOVERY (X)	478.9	481.6	529.9	394.4	302.6	350.6	360.2	242.3
ACCURACY(%REL ERROR)	-28.20	-19.74	-20.56	-34.27	-54.64	-41.57	-46.00	-59.62
OVERALL STD DEV (S)	224.8	269.2	184.4	214.1	282.3	203.3	194.3	162.1
OVERALL REL STD DEV, %	46.93	55.89	34.81	54.29	93.30	57.99	53.95	66.92
SINGLE STD DEV, (SR)	242.7		153.2		224.4		113.8	
ANALYST REL DEV, %	50.53		33.15		68.70		37.76	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-20

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR 1,3-DICHLOROBENZENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	12	13	11	11	9	12	13
TRUE CONC (C) UG/L	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
MEAN RECOVERY (X)	3.8	4.1	3.9	3.4	4.4	3.8	3.5	4.7
ACCURACY(%REL ERROR)	-23.40	-31.67	-21.85	-42.58	-11.64	-36.11	-30.83	-20.90
OVERALL STD DEV (S)	1.7	1.7	2.1	1.0	2.2	0.5	1.8	3.4
OVERALL REL STD DEV, %	45.31	40.36	54.44	29.75	50.01	14.05	52.05	71.56
SINGLE STD DEV, (SR)	1.6		1.8		1.5		1.8	
ANALYST REL DEV, %	41.46		48.62		36.27		44.78	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	13	13	14	12	13	13	14
TRUE CONC (C) UG/L	90.0	81.0	90.0	81.0	90.0	81.0	90.0	81.0
MEAN RECOVERY (X)	74.3	69.7	66.5	74.4	81.7	67.3	70.7	66.2
ACCURACY(%REL ERROR)	-17.41	-14.00	-26.16	-8.10	-9.18	-16.94	-21.40	-18.32
OVERALL STD DEV (S)	44.3	26.0	14.6	22.7	21.9	12.1	19.2	37.8
OVERALL REL STD DEV, %	59.57	37.26	22.04	30.51	26.79	18.02	27.11	57.08
SINGLE STD DEV, (SR)	26.8		16.7		18.1		22.4	
ANALYST REL DEV, %	37.21		23.64		24.34		32.69	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	14	14	13	13	11	13
TRUE CONC (C) UG/L	540.0	600.0	540.0	600.0	540.0	600.0	540.0	600.0
MEAN RECOVERY (X)	475.6	513.1	535.9	534.6	496.0	623.0	425.2	449.7
ACCURACY(%REL ERROR)	-11.93	-14.48	-0.76	-10.90	-8.15	3.84	-21.26	-25.05
OVERALL STD DEV (S)	161.5	166.7	268.0	322.8	216.0	267.7	66.5	290.1
OVERALL REL STD DEV, %	33.96	32.48	50.01	60.38	43.55	42.96	15.65	64.52
SINGLE STD DEV, (SR)	70.7		137.5		224.9		147.4	
ANALYST REL DEV, %	14.30		25.69		40.20		33.71	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-21

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR 2,6-DINITROTOLUENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	12	12	11	14	14	11	12
TRUE CONC (C) UG/L	11.0	12.0	11.0	12.0	11.0	12.0	11.0	12.0
MEAN RECOVERY (X)	8.2	9.0	8.1	9.7	8.4	8.8	9.4	11.5
ACCURACY(%REL ERROR)	-25.45	-25.31	-26.06	-18.94	-23.64	-26.90	-14.46	-4.17
OVERALL STD DEV (S)	2.7	1.1	2.2	1.5	4.1	4.9	3.5	4.3
OVERALL REL STD DEV, %	33.43	12.22	27.02	15.10	49.40	55.88	36.73	37.15
SINGLE STD DEV, (SR)	2.4		1.9		2.5		1.3	
ANALYST REL DEV, %	28.37		21.15		29.08		12.52	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	11	12	13	13	15	15	13	12
TRUE CONC (C) UG/L	81.0	90.0	81.0	90.0	81.0	90.0	81.0	90.0
MEAN RECOVERY (X)	73.4	95.7	78.6	85.1	85.4	87.6	76.7	89.3
ACCURACY(%REL ERROR)	-9.32	6.38	-2.95	-5.42	5.47	-2.70	-5.28	-0.80
OVERALL STD DEV (S)	16.7	19.3	10.5	18.6	23.9	12.0	17.5	27.3
OVERALL REL STD DEV, %	22.70	20.14	13.37	21.88	27.92	13.65	22.81	30.62
SINGLE STD DEV, (SR)	12.5		11.4		18.2		13.9	
ANALYST REL DEV, %	14.73		13.88		21.00		16.75	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	13	13	15	14	13	14
TRUE CONC (C) UG/L	600.0	540.0	600.0	540.0	600.0	540.0	600.0	540.0
MEAN RECOVERY (X)	606.6	615.7	622.9	553.3	606.4	590.0	718.3	544.2
ACCURACY(%REL ERROR)	1.10	14.02	3.82	2.46	1.06	9.25	19.72	0.77
OVERALL STD DEV (S)	118.4	107.5	108.2	183.3	229.1	164.9	214.8	224.7
OVERALL REL STD DEV, %	19.53	17.46	17.38	33.13	37.79	27.94	29.90	41.29
SINGLE STD DEV, (SR)	86.5		134.5		123.5		220.5	
ANALYST REL DEV, %	14.16		22.87		20.65		34.93	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-22

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR 3,3 -DICHLOROBENZIDINE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	13	13	12	12	12	9	11	11
TRUE CONC (C) UG/L	40.0	36.0	40.0	36.0	40.0	36.0	40.0	36.0
MEAN RECOVERY (X)	38.3	31.6	32.1	28.2	30.0	24.9	35.0	26.3
ACCURACY(%REL ERROR)	-4.33	-12.09	-19.81	-21.62	-25.00	-30.93	-12.61	-26.87
OVERALL STD DEV (S)	29.7	14.2	18.6	19.3	14.6	7.0	17.5	10.9
OVERALL REL STD DEV, %	77.55	44.72	58.10	68.26	48.61	27.98	50.00	41.46
SINGLE STD DEV, (SR)	18.1		10.7		7.0		16.0	
ANALYST REL DEV, %	51.66		35.59		25.55		52.17	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	12	12	12	11	12	11	11
TRUE CONC (C) UG/L	100.0	90.0	100.0	90.0	100.0	90.0	100.0	90.0
MEAN RECOVERY (X)	106.5	90.2	92.7	84.5	89.4	77.0	110.8	99.2
ACCURACY(%REL ERROR)	6.54	0.27	-7.25	-6.10	-10.64	-14.46	10.80	10.22
OVERALL STD DEV (S)	56.7	33.8	49.9	31.6	64.1	26.1	42.2	41.7
OVERALL REL STD DEV, %	53.26	37.48	53.77	37.37	71.73	33.93	38.09	42.04
SINGLE STD DEV, (SR)	25.6		31.3		37.2		14.7	
ANALYST REL DEV, %	25.98		35.33		44.68		14.00	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	12	12	12	12	11	11
TRUE CONC (C) UG/L	667.0	600.0	667.0	600.0	667.0	600.0	667.0	600.0
MEAN RECOVERY (X)	732.9	835.9	772.5	646.4	898.1	713.2	889.5	769.5
ACCURACY(%REL ERROR)	9.89	39.31	15.81	7.74	34.65	18.87	33.36	28.25
OVERALL STD DEV (S)	340.9	440.2	371.3	305.5	463.2	653.3	395.2	321.9
OVERALL REL STD DEV, %	46.51	52.66	48.06	47.26	51.57	91.60	44.42	41.83
SINGLE STD DEV, (SR)	273.3		134.6		546.9		299.8	
ANALYST REL DEV, %	34.85		18.98		67.88		36.14	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-23

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR 4-CHLOROPHENYL PHENYL ETHER ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	9	12	10	11	10	11	9	10
TRUE CONC (C) UG/L	9.0	10.0	9.0	10.0	9.0	10.0	9.0	10.0
MEAN RECOVERY (X)	9.0	9.3	8.8	9.2	9.5	10.1	7.4	8.9
ACCURACY(%REL ERROR)	0.12	-7.25	-2.22	-8.00	5.44	0.82	-17.65	-11.40
OVERALL STD DEV (S)	2.4	2.0	2.2	1.9	1.8	1.8	0.9	2.3
OVERALL REL STD DEV, %	26.72	22.10	25.05	20.43	18.98	17.94	11.54	26.49
SINGLE STD DEV, (SR)	0.8		1.2		1.1		1.4	
ANALYST REL DEV, %	9.15		12.82		11.40		17.08	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	11	11	11	11	11	12	11
TRUE CONC (C) UG/L	68.0	75.0	68.0	75.0	68.0	75.0	68.0	75.0
MEAN RECOVERY (X)	58.1	75.7	65.8	76.1	69.8	74.2	54.2	58.3
ACCURACY(%REL ERROR)	-14.62	0.96	-3.21	1.48	2.71	-1.08	-20.23	-22.29
OVERALL STD DEV (S)	24.4	12.0	11.1	14.4	13.9	15.5	14.5	17.9
OVERALL REL STD DEV, %	42.00	15.82	16.85	18.91	19.85	20.86	26.67	30.69
SINGLE STD DEV, (SR)	12.9		6.4		8.6		7.0	
ANALYST REL DEV, %	19.28		9.07		11.88		12.49	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	12	11	11	11	10	11	12
TRUE CONC (C) UG/L	500.0	450.0	500.0	450.0	500.0	450.0	500.0	450.0
MEAN RECOVERY (X)	450.9	405.9	487.2	387.1	462.9	431.0	453.7	335.9
ACCURACY(%REL ERROR)	-9.82	-9.81	-2.57	-13.98	-7.42	-4.22	-9.25	-25.35
OVERALL STD DEV (S)	132.0	124.7	131.2	135.5	138.8	113.4	161.4	127.8
OVERALL REL STD DEV, %	29.28	30.73	26.92	35.01	30.00	26.30	35.57	38.04
SINGLE STD DEV, (SR)	78.6		89.4		80.4		94.2	
ANALYST REL DEV, %	18.36		20.45		17.99		23.85	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE D-2a

[illegible]

[illegible]

[illegible]

[illegible]	0	0	0	0	0	0	0	0
[illegible]	0	00	00	0	0	0	0	0
[illegible]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[illegible]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
[illegible]	-00.00	-00.00	-00.00	-00.00	-00.00	-00.00	-00.00	-00.00
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[illegible]	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00

[illegible]	0.0	0.0	0.0	0.0
[illegible]	00.00	00.00	0.00	00.00

[illegible]	0	0	0	0	0	0	0	0
[illegible]	00	00	00	00	00	00	00	00
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[illegible]	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00

[illegible]	00.0	00.0	0.0	0.0
[illegible]	00.00	00.00	00.00	00.00

[illegible]	0	0	0	0	0	0	0	0
[illegible]	00	00	00	00	00	00	00	00
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[illegible]	00.00	00.00	00.00	00.00	00.00	00.00	00.00	00.00

[illegible]	00.0	00.0	000.0	00.0
[illegible]	00.00	00.00	00.00	00.00

[illegible]

0 = [illegible]
0 = [illegible]
0 = [illegible]
0 = [illegible]

TABLE D-23

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

STATISTICAL SUMMARY FOR 4,4 -DDE ANALYSIS BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	12	12	12	11	11	10	11
TRUE CONC PER UG/L	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0
MEAN RECOVERY PCT	6.2	6.9	7.6	8.5	6.4	6.8	7.1	6.7
ACCURACY(OVERALL CONSEN)	-56.76	-55.04	-46.21	-43.28	-54.29	-54.61	-49.27	-55.38
OVERALL STD DEV PCT	2.6	2.0	2.0	2.0	1.4	1.7	3.4	2.4
OVERALL REL STD DEV, %	38.90	29.67	38.74	34.16	22.44	26.85	47.16	36.09
SINGLE STD DEV, CONC	1.3		3.1		0.9		3.0	
ANALYST REL DEV, %	12.83		38.86		13.65		43.31	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	11	12	12	11	11	11	12
TRUE CONC PER UG/L	101.0	112.0	101.0	112.0	101.0	112.0	101.0	112.0
MEAN RECOVERY PCT	48.3	79.2	55.6	52.0	44.1	43.6	38.9	40.3
ACCURACY(OVERALL CONSEN)	-51.42	-29.28	-45.12	-53.85	-56.32	-61.09	-61.48	-64.00
OVERALL STD DEV PCT	32.3	16.7	22.6	18.5	15.6	14.1	19.3	20.1
OVERALL REL STD DEV, %	66.70	20.83	40.76	35.22	35.31	32.38	49.69	49.93
SINGLE STD DEV, CONC	22.3		10.0		12.3		18.0	
ANALYST REL DEV, %	50.28		36.85		28.13		45.31	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	12	12	12	11	11	12	11
TRUE CONC PER UG/L	750.0	675.0	750.0	675.0	750.0	675.0	750.0	675.0
MEAN RECOVERY PCT	508.3	483.4	506.1	373.1	379.6	356.6	460.2	325.6
ACCURACY(OVERALL CONSEN)	-32.29	-28.39	-32.52	-44.73	-49.41	-47.16	-38.63	-51.76
OVERALL STD DEV PCT	336.0	277.6	308.0	123.8	168.2	138.8	203.2	158.1
OVERALL REL STD DEV, %	67.77	64.88	61.89	33.65	44.34	38.93	44.15	48.56
SINGLE STD DEV, CONC	88.6		146.3		53.6		133.3	
ANALYST REL DEV, %	20.28		33.28		14.58		34.62	

WATER LEGEND

1 = DISTILLED WATER
2 = TAP WATER
3 = SURFACE WATER
4 = INDUSTRIAL EFFLUENT

TABLE B-26

[illegible]

[illegible]

[illegible]

[illegible]

	WATER 1		WATER 2		WATER 3		WATER 4	
[illegible]	1	2	1	2	1	2	1	2
[illegible]	8	11	8	8	7	7	8	7
[illegible]	7.4	11.0	7.4	11.0	7.4	11.0	7.4	11.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2.7	3.1	3.1	3.3
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.7	2.4	2.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		1.0		1.8		1.2	
[illegible]	[illegible]		[illegible]		[illegible]		[illegible]	
[illegible]	3	4	3	4	3	4	3	4
[illegible]	12	12	12	12	11	13	13	13
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	27.1	[illegible]	[illegible]	27.7
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		5.2		8.7		8.7	
[illegible]	[illegible]		[illegible]		[illegible]		[illegible]	
[illegible]	5	6	5	6	5	6	5	6
[illegible]	12	12	12	8	14	14	15	14
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]		[illegible]		[illegible]		[illegible]	
[illegible]	[illegible]		[illegible]		[illegible]		[illegible]	

[illegible]

[illegible]

TABLE B-27

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR BENZO(R)FLUORANTHENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW TRAINING FACE	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	12	12	12	9	11	11	11	12
TRUE CONC (C) (BLK)	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
MEAN RECOVERY (%)	5.9	6.0	6.9	6.1	3.9	6.8	6.1	3.7
ACCURACY(BIAS) (%)	-33.33	-32.87	-30.10	-43.08	-50.80	-33.59	-23.86	-48.96
OVERALL STD DEV (%)	2.7	2.2	2.2	1.7	2.4	3.1	3.3	2.8
OVERALL REL STD DEV, %	50.29	66.70	66.25	62.10	66.40	64.91	54.31	76.86
SYMBOL STD DEV, (SD)	2.0		0.7		2.4		2.2	
MARKET REL DEV, %	38.10		15.44		54.04		45.06	
PRECAR TRAINING FACE	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	14	11	11	14	14	14	13
TRUE CONC (C) (BLK)	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
MEAN RECOVERY (%)	43.2	44.3	28.8	24.4	33.5	24.7	27.4	24.2
ACCURACY(BIAS) (%)	-24.71	-22.31	-52.00	-57.16	-44.23	-56.60	-54.40	-57.61
OVERALL STD DEV (%)	22.0	17.0	11.5	11.5	21.4	13.1	18.5	17.9
OVERALL REL STD DEV, %	48.61	38.31	39.89	47.29	63.82	53.04	67.80	73.94
SYMBOL STD DEV, (SD)	10.6		5.9		13.0		7.4	
MARKET REL DEV, %	23.66		22.17		44.61		28.76	
CLAY TRAINING FACE	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	14	11	11	13	14	15	14
TRUE CONC (C) (BLK)	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
MEAN RECOVERY (%)	491.3	491.1	427.9	431.1	385.2	396.2	309.4	364.3
ACCURACY(BIAS) (%)	-3.26	-10.38	-16.43	-21.34	-24.76	-27.69	-39.58	-33.52
OVERALL STD DEV (%)	115.5	164.8	121.3	158.8	206.8	206.5	203.7	212.3
OVERALL REL STD DEV, %	23.52	33.56	23.68	36.84	53.67	52.12	65.83	58.28
SYMBOL STD DEV, (SD)	79.7		72.9		140.4		94.2	
MARKET REL DEV, %	16.16		16.97		35.93		27.95	

WATER LEGEND

1 = DISTILLED WATER
2 = TAP WATER
3 = SURFACE WATER
4 = ORGANIC SPILLWAY

TABLE 8-28

[illegible]
[illegible]
[illegible]

** EPA METHOD 625 VALIDATION STUDY - D/N (2) **

STATISTICAL SUMMARY FOR BENZYL BUTYL PHTHALATE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
[illegible]	1	2	1	2	1	2	1	2
[illegible]	13	13	12	10	10	9	11	12
[illegible]	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
[illegible]	3.7	3.2	5.5	3.7	4.0	2.9	5.2	4.8
[illegible]	-56.33	-55.45	-33.35	-49.17	-49.75	-60.19	-34.43	-33.45
[illegible]	3.8	2.4	5.2	2.7	2.2	2.2	4.4	2.8
[illegible]	82.29	73.98	93.99	73.05	55.37	76.47	83.83	58.80
[illegible]	1.8		2.9		1.4		2.1	
[illegible]	85.26		66.10		61.30		61.58	
[illegible]	3	4	3	4	3	4	3	4
[illegible]	14	14	12	13	13	13	12	12
[illegible]	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
[illegible]	31.6	28.7	29.6	26.2	22.4	22.6	28.3	34.2
[illegible]	-47.26	-49.36	-56.64	-53.05	-62.67	-60.42	-52.90	-39.93
[illegible]	28.9	23.9	23.8	17.9	18.8	15.7	17.6	23.9
[illegible]	65.62	80.33	66.25	68.30	83.74	69.44	62.43	69.87
[illegible]	8.5		7.7		11.7		18.7	
[illegible]	29.68		27.56		52.16		59.93	
[illegible]	5	6	5	6	5	6	5	6
[illegible]	13	13	13	13	13	13	12	12
[illegible]	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
[illegible]	383.8	419.7	358.8	407.8	512.9	349.1	339.0	409.0
[illegible]	-25.04	-27.42	-29.92	-25.58	-38.90	-36.30	-33.79	-25.36
[illegible]	144.3	142.2	131.7	129.0	162.7	167.9	162.1	191.7
[illegible]	37.79	36.66	36.72	31.62	52.01	48.11	53.71	46.87
[illegible]	79.4		59.4		162.1		156.9	
[illegible]	37.77		35.58		48.96		41.95	

[illegible]

N = [illegible]
D = [illegible]
D = [illegible]
O = [illegible]

TABLE 8-29

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR BIS(2-CHLOROETHOXY)METHANE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LAB NUMBER PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA PAIRS	12	12	11	12	10	9	12	11
TRUE CONC (UG/L)	12.0	11.0	12.0	11.0	12.0	11.0	12.0	11.0
MEAN RECOVERY (X)	8.4	7.2	7.9	7.1	7.4	8.1	10.7	12.5
DIFFERENCE(%BIAS)	-30.38	-34.70	-34.32	-35.00	-37.92	-26.67	-10.83	13.47
OVERALL STD DEV (X)	4.2	3.9	5.1	4.4	3.2	4.6	4.3	6.5
OVERALL REL STD DEV, R	49.98	53.84	64.23	62.09	42.70	57.15	39.98	52.24
OVERALL STD DEV, (UG)	2.6		3.9		2.2		5.4	
OVERALL REL STD DEV, R	33.42		52.08		27.91		46.29	
LAB NUMBER PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA PAIRS	14	14	12	14	13	13	14	13
TRUE CONC (UG/L)	79.0	77.0	79.0	77.0	79.0	77.0	79.0	77.0
MEAN RECOVERY (X)	83.9	83.3	76.9	72.1	81.6	70.8	90.6	73.7
DIFFERENCE(%BIAS)	7.78	8.14	-2.64	-6.38	3.30	-8.05	14.67	-4.32
OVERALL STD DEV (X)	30.2	17.7	13.7	25.1	26.9	26.9	35.7	22.5
OVERALL REL STD DEV, R	35.66	21.28	17.76	34.86	32.93	37.97	39.38	30.59
OVERALL STD DEV, (UG)	16.5		18.0		24.3		22.3	
OVERALL REL STD DEV, R	19.65		24.17		31.92		27.17	
LAB NUMBER PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA PAIRS	14	13	13	14	13	13	14	12
TRUE CONC (UG/L)	617.0	646.0	617.0	646.0	617.0	646.0	617.0	646.0
MEAN RECOVERY (X)	688.1	683.1	652.2	702.0	541.3	582.5	585.2	660.4
DIFFERENCE(%BIAS)	11.55	5.75	5.70	8.67	-12.26	-9.84	-5.16	2.23
OVERALL STD DEV (X)	169.2	204.6	172.8	227.6	205.1	157.3	228.6	113.1
OVERALL REL STD DEV, R	21.68	29.96	26.50	32.42	37.89	27.00	39.07	17.12
OVERALL STD DEV, (UG)	101.9		67.3		180.4		142.5	
OVERALL REL STD DEV, R	14.86		9.96		32.10		22.88	

WATER LEGEND
1 = DISTILLED WATER
2 = TAP WATER
3 = SURFACE WATER
4 = INDUSTRIAL EFFLUENT

TABLE 8-30

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR BIS(2-CHLOROISOPROPYL)ETHER ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
[illegible]	1	2	1	2	1	2	1	2
[illegible]	11	12	11	12	12	11	10	12
[illegible]	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0
[illegible]	10.7	14.5	13.2	9.8	13.2	13.1	13.9	13.8
[illegible]	-23.25	-3.39	-5.58	-34.72	-5.42	-12.91	-0.36	-7.72
[illegible]	3.9	4.6	3.4	4.0	5.7	4.9	1.8	4.4
[illegible]	36.12	31.91	25.49	41.24	43.36	37.62	12.74	31.49
[illegible]	3.5		2.9		2.8		2.7	
[illegible]	28.62		25.09		20.93		19.25	
[illegible]	3	4	3	4	3	4	3	4
[illegible]	11	12	12	13	13	13	9	12
[illegible]	79.0	81.0	79.0	81.0	79.0	81.0	79.0	81.0
[illegible]	86.5	78.1	70.2	69.2	70.1	72.2	78.8	73.2
[illegible]	9.53	-3.56	-11.14	-14.52	-11.22	-10.88	-0.24	-9.61
[illegible]	17.1	14.0	17.3	19.8	24.9	12.8	9.5	15.6
[illegible]	19.79	17.88	24.59	28.66	35.57	17.72	12.04	21.29
[illegible]	11.8		17.0		21.2		7.5	
[illegible]	16.39		24.61		29.74		9.92	
[illegible]	5	6	5	6	5	6	5	6
[illegible]	11	11	11	12	13	12	11	13
[illegible]	568.0	499.0	568.0	499.0	508.0	499.0	508.0	499.0
[illegible]	549.5	452.2	501.5	470.3	434.6	406.3	447.0	514.4
[illegible]	8.38	-9.37	-1.28	-5.75	-14.44	-18.58	-12.01	3.09
[illegible]	163.8	149.9	147.9	154.1	169.5	128.5	128.0	106.2
[illegible]	29.67	33.16	29.49	32.76	39.00	31.63	28.64	20.64
[illegible]	167.9		46.1		139.6		74.7	
[illegible]	33.59		9.49		33.21		15.53	

[illegible]

[illegible]

TABLE 8-31

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR BIS(2-ETHYLHEXYL)PHTHALATE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
[illegible]	1	2	1	2	1	2	1	2
[illegible]	12	14	11	11	6	6	11	10
[illegible]	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
[illegible]	6.2	4.5	2.6	2.6	2.5	2.0	3.3	3.0
[illegible]	-22.71	-38.00	-67.95	-63.64	-68.75	-72.45	-58.41	-58.89
[illegible]	2.2	2.6	1.2	2.1	0.7	0.9	2.2	1.9
[illegible]	31.35	57.64	46.46	78.90	29.72	47.66	65.60	63.43
[illegible] STD DEV, (SB)	2.1		1.2		0.4		1.7	
[illegible] REL STD DEV, %	39.96		45.63		19.70		53.87	
[illegible]	3	4	3	4	3	4	3	4
[illegible]	14	14	12	14	12	12	13	12
[illegible]	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
[illegible]	42.8	44.6	23.3	23.6	17.4	14.1	17.9	17.7
[illegible]	-38.81	-21.69	-61.10	-58.53	-71.01	-75.20	-70.17	-68.99
[illegible]	22.8	18.9	18.4	15.7	10.6	9.0	15.8	14.1
[illegible]	52.78	42.25	78.75	66.21	60.82	63.84	88.40	79.55
[illegible] STD DEV, (SB)	13.6		8.8		5.1		6.5	
[illegible] REL DEV, %	39.29		37.53		32.49		36.44	
[illegible]	5	6	5	6	5	6	5	6
[illegible]	14	14	14	14	13	13	14	13
[illegible]	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
[illegible]	458.9	498.4	448.4	389.8	360.3	368.1	300.1	430.1
[illegible]	-38.52	-9.05	-12.41	-28.86	-29.62	-32.83	-41.39	-21.52
[illegible]	148.9	131.7	93.1	133.8	147.4	131.5	169.6	165.1
[illegible]	32.58	26.42	20.76	34.32	40.91	35.73	56.51	38.38
[illegible] STD DEV, (SB)	111.3		84.6		155.9		115.4	
[illegible] REL DEV, %	23.27		20.19		42.79		31.61	

[illegible]

1 = [illegible]
2 = [illegible]
3 = [illegible]
4 = [illegible]

TABLE 8-32

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR CHRYSENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LAB SOURCE CODE	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	13	12	13	13	11	10	11	12
TRUE CONC (C) UG/L	6.0	5.4	6.0	5.4	6.0	5.4	6.0	5.4
MEAN RECOVERY (X)	4.5	4.1	4.3	3.8	3.9	3.6	4.7	3.5
ACCURACY(BIAS) (ABIAS)	-26.87	-24.69	-28.21	-29.06	-35.45	-33.52	-21.21	-35.03
OVERALL STD DEV (S)	1.2	1.4	1.2	1.8	1.6	1.3	2.6	2.0
OVERALL REL STD DEV, %	26.89	35.03	28.82	48.02	40.86	35.97	54.89	57.16
SINGLE STD DEV, (SR)	1.3		1.5		1.2		1.6	
OVERALL REL DEV, %	30.13		35.68		31.96		39.57	

	1	4	3	4	3	4	3	4
LAB SOURCE CODE	13	13	12	13	12	12	12	11
NUMBER OF DATA POINTS	45.0	43.0	45.0	43.0	45.0	43.0	45.0	43.0
TRUE CONC (C) UG/L	38.6	38.3	32.4	29.0	29.2	22.1	31.1	23.3
MEAN RECOVERY (X)	-14.15	-10.95	-27.91	-32.47	-35.17	-48.55	-30.87	-45.79
ACCURACY(BIAS) (ABIAS)	16.4	8.6	10.8	9.8	13.4	8.8	13.2	10.7
OVERALL STD DEV (S)	42.39	22.53	33.36	33.63	45.86	39.71	42.51	46.06
OVERALL REL STD DEV, %								
SINGLE STD DEV, (SR)	12.2		9.6		8.0		8.8	
OVERALL REL DEV, %	31.69		31.32		31.36		32.50	

	5	6	5	6	5	6	5	6
LAB SOURCE CODE	13	13	12	11	12	12	13	11
NUMBER OF DATA POINTS	384.0	411.0	384.0	411.0	384.0	411.0	384.0	411.0
TRUE CONC (C) UG/L	373.2	379.5	350.9	346.3	248.7	277.1	244.0	317.5
MEAN RECOVERY (X)	-2.88	-7.66	-8.62	-15.75	-35.23	-32.58	-36.47	-22.74
ACCURACY(BIAS) (ABIAS)	340.9	115.9	72.9	61.2	117.0	112.6	163.5	159.3
OVERALL STD DEV (S)	59.75	30.82	20.79	17.68	47.04	40.63	67.01	50.17
OVERALL REL STD DEV, %								
SINGLE STD DEV, (SR)	90.7		26.9		99.7		94.9	
OVERALL REL DEV, %	24.10		7.72		37.93		33.81	

LAB CODE
---
1 = DISTILLED WATER
2 = TAP WATER
3 = SURFACE WATER
4 = DOMESTIC EFFLUENT

TABLE 8-33

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR D-BHC ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
[illegible]	1	2	1	2	1	2	1	2
[illegible]	6	5	6	7	4	5	7	6
[illegible]	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
[illegible]	0.6	1.5	2.5	1.6	4.0	1.2	3.1	3.6
[illegible]	-92.50	-79.17	-71.44	-77.58	-50.00	-82.78	-60.71	-50.23
[illegible]	8.4	1.4	1.5	1.5	1.7	0.5	2.4	2.1
[illegible]	99.32	92.86	67.47	91.84	42.57	38.08	75.56	58.20
[illegible]	1.2		1.1		0.0		2.0	
[illegible]	135.67		58.76		2.62		60.34	
[illegible]	3	4	3	4	3	4	3	4
[illegible]	8	7	11	11	9	11	10	11
[illegible]	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
[illegible]	12.7	16.7	18.2	14.7	17.2	17.2	25.8	21.5
[illegible]	-79.90	-70.68	-69.67	-74.29	-71.40	-69.84	-56.98	-62.28
[illegible]	19.9	19.6	19.0	16.5	17.9	16.5	15.9	17.4
[illegible]	92.53	93.68	104.33	112.67	104.54	95.89	61.47	81.08
[illegible]	7.8		3.0		0.0		7.3	
[illegible]	52.91		18.31		17.18		30.86	
[illegible]	5	6	5	6	5	6	5	6
[illegible]	11	11	12	11	12	13	12	12
[illegible]	511.0	547.0	511.0	547.0	511.0	547.0	511.0	547.0
[illegible]	173.6	168.0	180.6	233.4	165.5	211.7	207.6	251.2
[illegible]	-66.03	-72.96	-64.65	-57.34	-67.61	-61.31	-59.37	-54.08
[illegible]	152.7	129.5	140.8	179.7	148.9	182.9	189.5	183.9
[illegible]	87.03	87.33	77.96	77.00	89.97	86.40	91.28	73.19
[illegible]	36.8		59.1		0.0		82.9	
[illegible]	22.90		25.63		188.59		36.14	

[illegible]

[illegible]

TABLE 8-34

[illegible] ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR DI-N-OCTYLPHTHALATE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
[illegible]	1	2	1	2	1	2	1	2
[illegible]	96	99	92	90	90	88	93	92
[illegible]	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
[illegible]	1.8	1.8	2.1	2.0	2.4	2.3	3.5	1.7
[illegible]	-57.92	-60.81	-74.27	-72.36	-69.88	-68.58	-56.63	-75.69
[illegible]	3.5	2.6	0.9	1.4	0.9	1.2	2.8	1.3
[illegible]	65.83	51.84	66.74	68.47	37.03	51.86	81.99	79.86
[illegible]		2.2		1.1		0.5		1.5
[illegible]		66.72		52.21		21.85		57.27
[illegible]	3	4	3	4	3	4	3	4
[illegible]	96	94	93	94	93	91	94	94
[illegible]	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
[illegible]	40.0	42.6	21.8	18.2	17.2	14.2	20.8	16.4
[illegible]	-32.29	-25.23	-63.60	-68.15	-71.26	-75.02	-65.25	-71.14
[illegible]	23.2	18.1	14.5	12.9	11.0	9.6	20.5	14.6
[illegible]	57.81	42.52	66.50	70.94	64.05	67.32	98.38	88.66
[illegible]		9.4		4.9		4.0		5.3
[illegible]		22.49		24.72		25.13		28.39
[illegible]	5	6	5	6	5	6	5	6
[illegible]	94	96	93	93	93	93	94	94
[illegible]	532.0	548.0	532.0	548.0	532.0	548.0	532.0	548.0
[illegible]	438.9	422.7	360.9	373.1	388.7	339.2	300.7	347.2
[illegible]	-58.19	-22.87	-29.66	-31.92	-24.09	-38.11	-41.27	-36.64
[illegible]	548.4	96.7	188.7	105.5	231.6	131.1	183.8	179.5
[illegible]	33.52	22.40	52.48	28.27	59.58	38.66	61.14	51.69
[illegible]		92.5		109.9		212.8		121.6
[illegible]		21.98		29.97		58.47		37.54

[illegible]

1 = [illegible]
2 = [illegible]
3 = [illegible]
4 = [illegible]

TABLE 8-35

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR DIELDRIN ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
[illegible]	1	2	1	2	1	2	1	2
[illegible]	11	12	10	11	12	12	11	12
[illegible]	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
[illegible]	6.4	5.7	6.1	5.5	6.5	5.6	6.8	5.9
[illegible]	-20.23	-21.06	-23.38	-23.74	-19.06	-21.99	-14.43	-18.63
[illegible]	9.0	9.5	0.9	0.9	1.2	0.9	1.1	2.5
[illegible]	24.39	29.99	14.98	15.87	18.52	16.72	16.14	42.92
[illegible]	3.5		0.7		0.7		1.5	
[illegible]	17.62		11.84		11.64		24.24	
[illegible]	3	4	3	4	3	4	3	4
[illegible]	12	12	11	12	13	13	10	12
[illegible]	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
[illegible]	50.7	48.5	48.7	48.7	45.7	43.5	41.8	43.5
[illegible]	-25.46	-28.42	-22.24	-28.63	-23.81	-23.71	-30.32	-23.71
[illegible]	10.5	8.6	10.9	10.8	10.9	9.2	9.3	9.9
[illegible]	20.77	24.93	23.43	26.48	23.79	21.23	22.14	22.68
[illegible]	4.9		8.2		9.0		6.3	
[illegible]	9.99		18.77		20.19		14.87	
[illegible]	5	6	5	6	5	6	5	6
[illegible]	13	13	11	12	13	13	11	12
[illegible]	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
[illegible]	404.6	433.3	354.9	364.5	332.3	344.9	296.5	376.2
[illegible]	-28.83	-28.96	-30.69	-33.48	-35.09	-37.06	-42.10	-31.35
[illegible]	520.0	570.3	90.9	129.5	134.7	124.8	128.9	156.9
[illegible]	28.29	40.78	27.09	35.54	40.92	36.18	43.46	41.70
[illegible]	117.2		70.5		97.2		117.0	
[illegible]	27.84		19.53		28.78		34.79	

[illegible]

1 = [illegible]
2 = [illegible]
3 = [illegible]
4 = [illegible]

TABLE 8-36

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - D/N (2) **

STATISTICAL SUMMARY FOR DIMETHYL PHTHALATE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
[illegible]	1	2	1	2	1	2	1	2
[illegible]	5	4	8	4	5	5	5	7
[illegible]	5.0	4.5	5.0	4.5	5.0	4.5	5.0	4.5
[illegible]	2.0	1.9	1.8	0.9	2.1	1.7	0.8	1.1
[illegible]	-60.00	-56.67	-64.00	-60.74	-58.00	-62.22	-84.80	-74.60
[illegible]	1.3	1.1	1.4	0.6	1.3	1.0	0.3	0.5
[illegible]	64.71	54.03	77.66	74.30	63.62	57.33	42.23	46.81
[illegible]	1.3		0.4		0.5		0.3	
[illegible]	64.14		33.54		24.78		33.44	
[illegible]	3	4	3	4	3	4	3	4
[illegible]	9	10	11	11	13	11	10	10
[illegible]	38.0	36.0	38.0	36.0	38.0	36.0	38.0	36.0
[illegible]	6.6	8.4	9.2	12.9	13.1	10.5	13.2	15.2
[illegible]	-82.59	-76.72	-75.72	-64.15	-65.46	-70.78	-65.24	-57.72
[illegible]	5.5	8.7	9.2	13.0	14.4	8.8	11.0	13.1
[illegible]	85.21	103.24	106.05	101.09	109.96	84.06	83.42	86.13
[illegible]	4.2		2.9		7.2		9.6	
[illegible]	55.84		25.89		60.92		67.76	
[illegible]	5	6	5	6	5	6	5	6
[illegible]	10	10	14	14	14	15	10	10
[illegible]	320.0	343.0	320.0	343.0	320.0	343.0	320.0	343.0
[illegible]	93.3	51.3	87.3	106.5	81.4	106.4	77.5	121.3
[illegible]	-90.80	-85.04	-72.71	-68.96	-74.57	-68.99	-75.79	-64.62
[illegible]	103.7	69.2	101.0	91.2	88.5	114.9	75.9	102.3
[illegible]	111.20	95.90	115.62	85.57	108.53	108.03	97.97	84.34
[illegible]	39.9		28.1		74.5		69.2	
[illegible]	55.19		28.95		79.41		69.65	

[illegible]

1 = [illegible]
2 = [illegible]
3 = [illegible]
4 = [illegible]

TABLE B-37

[illegible]

[illegible]	WATER 1		WATER 2		WATER 3		WATER 4	
[illegible]	1	2	1	2	1	2	1	2
[illegible]	10	10	10	10	8	9	8	8
[illegible]	22.0	25.0	22.0	25.0	22.0	25.0	22.0	25.0
[illegible]	[illegible]	[illegible]	9.3	10.2	14.5	14.9	11.5	12.2
[illegible]	[illegible]	[illegible]	-57.59	-59.28	-33.86	-40.49	-47.78	-51.00
[illegible]	[illegible]	[illegible]	6.3	6.0	6.5	10.7	9.4	9.8
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	66.45	71.73	81.93	80.18
[illegible]	[illegible]		3.7		4.3		2.6	
[illegible]	[illegible]		37.55		29.50		21.61	
[illegible]	3	4	3	4	3	4	3	4
[illegible]	10	12	12	11	9	10	9	10
[illegible]	119.0	125.0	119.0	125.0	119.0	125.0	119.0	125.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	67.6	82.4	55.4	72.7
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-43.23	-34.10	-53.41	-41.83
[illegible]	[illegible]	[illegible]	67.8	38.1	39.6	49.2	43.7	54.5
[illegible]	[illegible]	[illegible]	[illegible]	68.07	58.87	59.73	78.85	74.93
[illegible]	[illegible]		33.3		15.6		27.2	
[illegible]	[illegible]		46.23		35.16		42.61	
[illegible]	5	6	5	6	5	6	5	6
[illegible]	10	12	11	11	10	10	11	11
[illegible]	650.0	611.0	650.0	611.0	650.0	611.0	650.0	611.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	380.7	372.5	397.1	358.8
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-42.16	-39.04	-39.65	-41.27
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	277.0	248.2	326.5	224.6
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	72.75	66.63	82.23	62.59
[illegible]	[illegible]		[illegible]		66.9		168.7	
[illegible]	[illegible]		[illegible]		17.23		64.64	

[illegible]

TABLE 8-38

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR FLUORENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	12	12	10	11	13	12	11	13
TRUE CONC (C) UG/L	6.0	5.4	6.0	5.4	6.0	5.4	6.0	5.4
MEAN RECOVERY (X)	5.4	4.9	5.3	4.8	4.7	4.7	5.0	5.6
ACCURACY(%REL ERROR)	-10.69	-8.64	-12.33	-11.95	-20.90	-13.12	-16.36	3.13
OVERALL STD DEV (S)	1.0	1.5	0.8	1.5	1.0	1.2	1.3	3.5
OVERALL REL STD DEV, %	19.16	30.70	14.92	31.90	21.03	25.97	25.80	63.65
SINGLE STD DEV, (SR)	0.9		1.1		0.7		2.6	
ANALYST REL DEV, %	17.72		21.20		13.98		37.85	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	13	11	11	13	12	11	11
TRUE CONC (C) UG/L	45.0	43.0	45.0	43.0	45.0	43.0	45.0	43.0
MEAN RECOVERY (X)	40.9	38.9	38.1	34.5	36.5	34.9	35.7	33.1
ACCURACY(%REL ERROR)	-9.04	-9.48	-15.33	-19.79	-18.97	-18.86	-20.61	-23.02
OVERALL STD DEV (S)	5.0	3.8	4.1	5.7	9.1	6.1	5.4	6.7
OVERALL REL STD DEV, %	12.20	9.72	10.66	16.66	24.89	17.47	15.11	20.18
SINGLE STD DEV, (SR)	1.9		3.7		5.4		3.6	
ANALYST REL DEV, %	4.84		10.31		15.17		10.39	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	10	11	13	13	13	12
TRUE CONC (C) UG/L	384.0	411.0	384.0	411.0	384.0	411.0	384.0	411.0
MEAN RECOVERY (X)	355.8	360.8	337.9	323.2	278.6	329.8	256.9	300.7
ACCURACY(%REL ERROR)	-7.34	-12.20	-11.99	-21.37	-27.45	-19.76	-33.09	-26.83
OVERALL STD DEV (S)	80.9	36.2	33.3	55.3	101.9	88.0	102.7	76.8
OVERALL REL STD DEV, %	22.73	10.03	9.85	17.12	36.59	26.68	39.98	25.55
SINGLE STD DEV, (SR)	67.0		39.5		87.4		58.6	
ANALYST REL DEV, %	18.68		11.95		28.74		21.00	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-39

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR HEPTACHLOR EPOXIDE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	13	12	13	13	13	13	12	10
TRUE CONC (C) UG/L	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
MEAN RECOVERY (X)	4.9	5.1	5.6	4.3	5.8	5.6	4.9	3.6
ACCURACY(%REL ERROR)	-38.17	-28.59	-30.00	-40.71	-27.98	-22.44	-39.17	-49.86
OVERALL STD DEV (S)	2.0	2.1	1.3	1.7	1.9	1.8	1.9	1.7
OVERALL REL STD DEV, %	41.13	41.22	23.24	40.68	32.69	32.83	39.71	47.13
SINGLE STD DEV, (SR)	1.2		1.4		1.3		2.0	
ANALYST REL DEV, %	24.12		27.50		22.82		46.03	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	15	14	13	12	14	14	11	12
TRUE CONC (C) UG/L	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
MEAN RECOVERY (X)	55.9	51.4	55.6	46.2	53.8	50.3	38.9	39.5
ACCURACY(%REL ERROR)	-6.83	-9.81	-7.35	-19.03	-10.29	-11.69	-35.15	-30.75
OVERALL STD DEV (S)	21.8	9.3	15.5	14.7	13.2	9.0	16.6	11.7
OVERALL REL STD DEV, %	39.08	18.01	27.85	31.78	24.56	17.81	42.62	29.72
SINGLE STD DEV, (SR)	17.2		8.2		9.3		15.6	
ANALYST REL DEV, %	31.99		16.13		17.76		39.91	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	15	13	13	13	14	14	12	12
TRUE CONC (C) UG/L	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
MEAN RECOVERY (X)	512.5	431.3	440.1	475.4	401.5	445.3	320.5	405.6
ACCURACY(%REL ERROR)	0.11	-21.29	-14.04	-13.25	-21.58	-18.74	-37.40	-25.98
OVERALL STD DEV (S)	176.4	106.0	152.0	238.4	194.8	197.2	167.6	178.1
OVERALL REL STD DEV, %	34.42	24.58	34.53	50.16	48.51	44.29	52.28	43.92
SINGLE STD DEV, (SR)	157.5		80.2		122.3		162.4	
ANALYST REL DEV, %	33.38		17.51		28.88		44.73	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-40

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR HEXACHLOROBUTADIENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	15	13	14	13	14	13	13	12
TRUE CONC (C) UG/L	10.0	9.0	10.0	9.0	10.0	9.0	10.0	9.0
MEAN RECOVERY (X)	5.7	5.7	5.6	4.9	6.0	5.5	6.0	5.3
ACCURACY(%REL ERROR)	-43.27	-36.50	-44.14	-45.30	-40.43	-39.06	-40.23	-40.83
OVERALL STD DEV (S)	2.6	1.3	1.8	2.3	2.0	2.1	2.3	2.9
OVERALL REL STD DEV, %	45.24	23.40	31.48	46.70	33.16	38.22	38.78	55.37
SINGLE STD DEV, (SR)	2.0		1.7		1.2		2.1	
ANALYST REL DEV, %	35.31		31.66		20.90		37.66	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	15	14	14	14	13	14	12	13
TRUE CONC (C) UG/L	75.0	71.0	75.0	71.0	75.0	71.0	75.0	71.0
MEAN RECOVERY (X)	51.3	49.7	48.7	46.9	47.3	46.1	54.4	41.0
ACCURACY(%REL ERROR)	-31.65	-29.93	-35.12	-33.89	-36.88	-35.03	-27.46	-42.25
OVERALL STD DEV (S)	13.1	11.6	10.3	11.0	11.4	11.6	19.9	8.7
OVERALL REL STD DEV, %	25.47	23.29	21.27	23.49	24.02	25.12	36.49	21.20
SINGLE STD DEV, (SR)	8.9		10.7		9.0		13.4	
ANALYST REL DEV, %	17.54		22.29		19.25		28.08	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	14	15	14	13	13	13	13	12
TRUE CONC (C) UG/L	640.0	685.0	640.0	685.0	640.0	685.0	640.0	685.0
MEAN RECOVERY (X)	490.6	453.3	411.0	390.6	396.6	390.8	349.7	359.4
ACCURACY(%REL ERROR)	-23.35	-33.82	-35.79	-42.98	-38.03	-42.95	-45.36	-47.53
OVERALL STD DEV (S)	116.6	142.2	60.1	53.7	84.4	67.6	122.4	94.7
OVERALL REL STD DEV, %	23.77	31.36	14.61	13.74	21.29	17.30	34.99	26.34
SINGLE STD DEV, (SR)	103.2		47.6		77.4		68.8	
ANALYST REL DEV, %	21.86		11.87		19.67		19.41	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-41

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR HEXACHLOROETHANE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	12	12	11	12	12	12	12	12
TRUE CONC (C) UG/L	7.0	6.3	7.0	6.3	7.0	6.3	7.0	6.3
MEAN RECOVERY (X)	4.0	4.0	4.5	4.0	4.2	3.6	4.5	4.1
ACCURACY(%REL ERROR)	-42.86	-36.90	-36.23	-35.71	-39.64	-42.46	-35.71	-34.52
OVERALL STD DEV (S)	1.7	1.3	1.3	1.6	1.3	1.5	1.6	2.3
OVERALL REL STD DEV, %	42.60	32.34	28.20	39.49	31.93	41.76	36.40	56.80
SINGLE STD DEV, (SR)	1.4		1.5		0.6		1.2	
ANALYST REL DEV, %	34.61		34.43		14.98		28.90	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	12	14	13	13	14	14	13
TRUE CONC (C) UG/L	52.0	49.0	52.0	49.0	52.0	49.0	52.0	49.0
MEAN RECOVERY (X)	37.5	36.1	37.3	31.6	34.7	33.2	39.8	31.8
ACCURACY(%REL ERROR)	-27.94	-26.36	-28.35	-35.45	-33.20	-32.18	-23.54	-35.10
OVERALL STD DEV (S)	5.7	8.0	9.2	10.3	9.3	12.9	15.7	6.2
OVERALL REL STD DEV, %	15.20	22.16	21.93	32.46	26.70	38.87	39.52	19.47
SINGLE STD DEV, (SR)	5.4		10.0		9.7		8.9	
ANALYST REL DEV, %	14.67		29.17		28.44		24.78	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	11	13	14	14	13	13	12	12
TRUE CONC (C) UG/L	448.0	480.0	448.0	480.0	448.0	480.0	448.0	480.0
MEAN RECOVERY (X)	341.0	324.0	325.5	292.8	314.4	332.8	277.9	342.7
ACCURACY(%REL ERROR)	-23.88	-32.51	-27.34	-39.01	-29.82	-30.68	-37.96	-28.60
OVERALL STD DEV (S)	43.9	77.8	48.5	63.8	63.9	79.8	72.6	56.3
OVERALL REL STD DEV, %	12.86	24.00	14.90	21.78	20.34	23.97	26.11	16.43
SINGLE STD DEV, (SR)	72.4		48.7		89.6		53.4	
ANALYST REL DEV, %	21.76		15.7.		27.70		17.19	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-42

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR INDENO(1,2,3-C,D)PYRENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	11	5	8	6	6	6	7
TRUE CONC (C) UG/L	7.4	11.0	7.4	11.0	7.4	11.0	7.4	11.0
MEAN RECOVERY (X)	2.8	5.7	2.5	2.9	2.6	2.7	2.9	2.6
ACCURACY(%REL ERROR)	-62.70	-47.77	-66.22	-73.98	-65.32	-75.61	-60.81	-76.10
OVERALL STD DEV (S)	1.7	4.1	2.0	1.7	2.3	1.0	1.2	2.1
OVERALL REL STD DEV, %	59.83	70.77	78.59	60.77	89.72	37.74	42.18	81.14
SINGLE STD DEV, (SR)	2.7		0.9		1.2		1.5	
ANALYST REL DEV, %	63.33		33.90		46.45		55.10	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	11	11	12	11	13	12	13
TRUE CONC (C) UG/L	74.0	56.0	74.0	56.0	74.0	56.0	74.0	56.0
MEAN RECOVERY (X)	48.6	30.7	25.3	16.2	22.3	13.4	25.6	22.7
ACCURACY(%REL ERROR)	-34.39	-45.13	-65.77	-71.04	-69.82	-76.01	-65.38	-59.49
OVERALL STD DEV (S)	26.8	11.3	13.6	9.9	10.6	9.8	13.9	15.4
OVERALL REL STD DEV, %	55.27	36.70	53.58	61.03	47.57	73.25	54.21	67.76
SINGLE STD DEV, (SR)	13.8		4.0		8.3		6.6	
ANALYST REL DEV, %	34.92		19.16		46.42		27.31	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	12	11	11	12	12	12	12
TRUE CONC (C) UG/L	278.0	292.0	278.0	292.0	278.0	292.0	278.0	292.0
MEAN RECOVERY (X)	248.6	255.4	242.7	207.2	177.5	203.3	167.2	220.6
ACCURACY(%REL ERROR)	-10.58	-12.52	-12.70	-29.04	-36.16	-30.36	-39.85	-24.45
OVERALL STD DEV (S)	114.3	140.5	122.2	86.6	85.0	133.3	102.5	130.6
OVERALL REL STD DEV, %	45.99	55.00	50.36	41.78	47.92	65.55	61.27	59.20
SINGLE STD DEV, (SR)	70.0		74.3		110.3		89.6	
ANALYST REL DEV, %	27.79		33.03		57.91		46.21	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-43

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR N-NITROSODI-N-PROPYLAMINE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	7	8	8	8	9	8	9	6
TRUE CONC (C) UG/L	18.0	20.0	18.0	20.0	18.0	20.0	18.0	20.0
MEAN RECOVERY (X)	15.1	14.9	10.3	15.0	15.6	17.2	17.0	17.9
ACCURACY(%REL ERROR)	-16.35	-25.63	-42.64	-24.88	-13.15	-13.75	-5.68	-10.67
OVERALL STD DEV (S)	6.1	8.6	8.4	7.6	5.4	6.0	9.1	9.9
OVERALL REL STD DEV, %	40.23	57.74	80.87	50.25	34.72	34.70	53.82	55.43
SINGLE STD DEV, (SR)	4.9		7.4		3.8		7.4	
ANALYST REL DEV, %	32.82		58.65		22.98		42.49	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	14	13	13	14	14	11	13
TRUE CONC (C) UG/L	95.0	100.0	95.0	100.0	95.0	100.0	95.0	100.0
MEAN RECOVERY (X)	104.3	92.3	92.0	97.3	88.5	93.5	72.4	101.5
ACCURACY(%REL ERROR)	9.78	-7.65	-3.18	-2.70	-6.86	-6.54	-23.74	1.47
OVERALL STD DEV (S)	23.8	34.4	26.8	38.4	59.2	34.6	36.8	58.8
OVERALL REL STD DEV, %	22.85	37.24	29.10	39.44	66.89	37.00	50.80	57.98
SINGLE STD DEV, (SR)	18.0		20.8		42.5		53.5	
ANALYST REL DEV, %	18.28		21.95		46.71		61.57	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	14	14	13	13	14	13	13
TRUE CONC (C) UG/L	527.0	489.0	527.0	489.0	527.0	489.0	527.0	489.0
MEAN RECOVERY (X)	679.8	485.0	690.0	426.9	592.5	507.3	429.7	471.1
ACCURACY(%REL ERROR)	28.99	-0.82	30.92	-12.69	12.43	3.73	-18.45	-3.67
OVERALL STD DEV (S)	343.3	308.3	368.0	271.3	264.6	325.8	174.0	205.4
OVERALL REL STD DEV, %	50.50	63.58	53.33	63.53	44.66	64.23	40.50	43.60
SINGLE STD DEV, (SR)	206.0		233.8		198.3		77.9	
ANALYST REL DEV, %	35.37		41.86		36.06		17.29	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-44

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR NITROBENZENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	12	11	8	10	7	12	9	8
TRUE CONC (C) UG/L	10.0	9.0	10.0	9.0	10.0	9.0	10.0	9.0
MEAN RECOVERY (X)	8.5	6.3	8.0	5.2	7.0	8.8	7.9	5.9
ACCURACY(%REL ERROR)	-14.67	-30.40	-19.88	-42.22	-29.57	-2.04	-21.22	-34.86
OVERALL STD DEV (S)	2.9	1.8	2.5	2.5	1.7	6.2	1.9	2.2
OVERALL REL STD DEV, %	34.46	28.29	31.36	48.92	24.36	69.86	24.16	38.02
SINGLE STD DEV, (SR)	2.3		1.8		0.4		2.8	
ANALYST REL DEV, %	31.57		27.89		4.87		40.94	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	14	12	13	14	13	12	12
TRUE CONC (C) UG/L	75.0	71.0	75.0	71.0	75.0	71.0	75.0	71.0
MEAN RECOVERY (X)	80.5	70.1	67.3	62.8	71.5	63.8	78.8	69.8
ACCURACY(%REL ERROR)	7.29	-1.32	-10.20	-11.54	-4.71	-10.14	5.09	-1.62
OVERALL STD DEV (S)	12.4	19.3	16.4	14.3	21.8	22.5	33.4	25.4
OVERALL REL STD DEV, %	15.45	27.49	24.31	22.81	30.53	35.30	42.34	36.33
SINGLE STD DEV, (SR)	12.4		10.9		22.8		14.2	
ANALYST REL DEV, %	16.42		16.76		33.64		19.10	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	14	13	13	14	14	12	13
TRUE CONC (C) UG/L	639.0	685.0	639.0	685.0	639.0	685.0	639.0	685.0
MEAN RECOVERY (X)	765.5	686.9	703.4	712.5	651.7	663.7	566.1	706.6
ACCURACY(%REL ERROR)	19.80	0.28	10.09	4.02	1.98	-3.12	-11.41	3.16
OVERALL STD DEV (S)	223.4	249.3	244.3	245.9	258.5	170.1	197.2	181.8
OVERALL REL STD DEV, %	29.18	36.29	34.72	34.51	39.66	25.63	34.84	25.73
SINGLE STD DEV, (SR)	161.3		92.4		199.5		120.6	
ANALYST REL DEV, %	22.21		13.06		30.34		18.96	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-45

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR PHENANTHRENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	13	13	11	11	11	11	12	12
TRUE CONC (C) UG/L	10.0	9.0	10.0	9.0	10.0	9.0	10.0	9.0
MEAN RECOVERY (X)	8.4	7.9	8.6	7.6	8.4	8.3	10.0	7.6
ACCURACY(%REL ERROR)	-15.54	-12.74	-13.67	-15.19	-15.64	-7.98	-0.08	-15.83
OVERALL STD DEV (S)	1.7	1.5	0.9	1.2	1.1	1.6	2.4	2.5
OVERALL REL STD DEV, %	20.03	18.97	10.34	16.19	12.50	19.42	24.07	33.57
SINGLE STD DEV, (SR)	1.6		0.7		1.2		2.0	
ANALYST REL DEV, %	19.64		9.10		14.37		22.27	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	12	9	11	11	11	13	11
TRUE CONC (C) UG/L	75.0	71.0	75.0	71.0	75.0	71.0	75.0	71.0
MEAN RECOVERY (X)	68.4	63.6	63.5	60.0	64.5	60.8	72.3	62.9
ACCURACY(%REL ERROR)	-8.82	-10.40	-15.32	-15.55	-13.95	-14.41	-3.61	-11.38
OVERALL STD DEV (S)	6.2	3.2	2.7	6.5	5.6	6.4	21.3	7.2
OVERALL REL STD DEV, %	9.03	5.08	4.23	10.77	8.60	10.54	29.44	11.46
SINGLE STD DEV, (SR)	5.2		5.1		2.4		10.1	
ANALYST REL DEV, %	7.81		8.32		3.82		15.01	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	11	11	12	10	13	12
TRUE CONC (C) UG/L	640.0	685.0	640.0	685.0	640.0	685.0	640.0	685.0
MEAN RECOVERY (X)	571.8	537.6	487.6	491.4	409.8	478.0	465.5	493.7
ACCURACY(%REL ERROR)	-10.66	-21.52	-23.81	-28.26	-35.96	-30.21	-27.27	-27.92
OVERALL STD DEV (S)	135.0	122.0	61.1	67.6	156.5	77.1	173.2	184.6
OVERALL REL STD DEV, %	23.62	22.70	12.54	13.76	38.18	16.12	37.20	37.40
SINGLE STD DEV, (SR)	93.3		50.7		116.3		49.2	
ANALYST REL DEV, %	16.82		10.36		26.20		10.25	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-46

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR PYRENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	14	13	12	13	13	12	12	13
TRUE CONC (C) UG/L	5.0	4.5	5.0	4.5	5.0	4.5	5.0	4.5
MEAN RECOVERY (X)	3.9	3.7	3.8	3.3	3.8	3.9	5.1	4.5
ACCURACY(%REL ERROR)	-21.29	-18.12	-23.83	-26.67	-24.77	-13.70	1.33	-0.00
OVERALL STD DEV (S)	0.9	0.9	0.8	1.1	1.0	0.9	2.0	2.5
OVERALL REL STD DEV, %	22.21	24.25	20.63	33.24	26.84	22.39	39.60	55.36
SINGLE STD DEV, (SR)	0.7		0.6		0.4		1.0	
ANALYST REL DEV, %	18.21		16.46		11.76		20.68	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	13	12	12	12	12	14	12
TRUE CONC (C) UG/L	38.0	36.0	38.0	36.0	38.0	36.0	38.0	36.0
MEAN RECOVERY (X)	31.8	30.2	31.9	27.5	29.6	28.8	28.6	28.0
ACCURACY(%REL ERROR)	-16.25	-16.24	-16.14	-23.51	-21.97	-19.99	-24.83	-22.08
OVERALL STD DEV (S)	5.1	2.6	4.1	4.3	6.2	2.7	10.2	5.4
OVERALL REL STD DEV, %	16.07	8.77	12.85	15.57	21.06	9.45	35.76	19.43
SINGLE STD DEV, (SR)	3.4		2.7		4.0		4.6	
ANALYST REL DEV, %	10.99		8.92		13.62		16.30	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	14	13	13	12	12	13	14	13
TRUE CONC (C) UG/L	320.0	343.0	320.0	343.0	320.0	343.0	320.0	343.0
MEAN RECOVERY (X)	276.8	275.9	236.5	244.7	226.8	235.7	204.3	233.2
ACCURACY(%REL ERROR)	-13.51	-19.58	-26.09	-28.64	-29.11	-31.27	-36.15	-32.01
OVERALL STD DEV (S)	63.4	36.1	40.0	28.7	48.0	46.4	99.2	96.4
OVERALL REL STD DEV, %	22.90	13.09	16.91	11.72	21.17	19.69	48.55	41.34
SINGLE STD DEV, (SR)	57.1		28.1		40.4		40.5	
ANALYST REL DEV, %	20.67		11.69		17.47		18.51	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-47

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR 1,2-DICHLOROBENZENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	13	11	11	12	12	12	12	13
TRUE CONC (C) UG/L	6.0	5.4	6.0	5.4	6.0	5.4	6.0	5.4
MEAN RECOVERY (X)	5.3	4.4	5.1	4.8	5.9	5.1	5.5	5.4
ACCURACY(%REL ERROR)	-12.31	-17.85	-15.30	-10.19	-1.11	-6.17	-12.36	-0.00
OVERALL STD DEV (S)	2.1	1.1	1.8	2.4	3.3	2.4	1.6	2.7
OVERALL REL STD DEV, %	40.00	25.43	35.95	50.19	55.10	48.25	31.18	49.28
SINGLE STD DEV, (SR)	1.5		1.8		1.1		1.3	
ANALYST REL DEV, %	30.33		37.22		20.57		23.53	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	13	12	12	12	14	13	14
TRUE CONC (C) UG/L	45.0	43.0	45.0	43.0	45.0	43.0	45.0	43.0
MEAN RECOVERY (X)	32.5	37.3	35.2	38.6	37.2	31.1	41.3	28.9
ACCURACY(%REL ERROR)	-27.86	-13.35	-21.72	-10.14	-17.34	-27.56	-8.17	-32.86
OVERALL STD DEV (S)	10.1	6.4	7.9	13.0	12.6	8.6	14.5	8.6
OVERALL REL STD DEV, %	31.24	17.14	22.31	33.62	33.80	27.76	35.18	29.76
SINGLE STD DEV, (SR)	6.0		8.5		11.6		9.3	
ANALYST REL DEV, %	17.29		22.95		34.06		26.64	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	14	11	12	13	15	15	14
TRUE CONC (C) UG/L	384.0	411.0	384.0	411.0	384.0	411.0	384.0	411.0
MEAN RECOVERY (X)	341.9	295.7	295.7	298.1	290.3	312.0	266.6	293.9
ACCURACY(%REL ERROR)	-10.95	-28.06	-22.99	-27.47	-24.39	-24.09	-30.58	-28.49
OVERALL STD DEV (S)	80.5	73.8	44.2	99.6	53.3	87.9	110.9	96.6
OVERALL REL STD DEV, %	23.53	24.96	14.94	33.42	18.36	28.18	41.61	32.86
SINGLE STD DEV, (SR)	76.3		45.7		66.8		64.2	
ANALYST REL DEV, %	23.93		15.40		22.17		22.92	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-48

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR 1,2,4-TRICHLOROBENZENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	12	11	13	12	13	13	12	11
TRUE CONC (C) UG/L	11.0	10.0	11.0	10.0	11.0	10.0	11.0	10.0
MEAN RECOVERY (X)	8.7	9.1	8.3	8.1	8.7	8.5	9.1	7.9
ACCURACY(%REL ERROR)	-20.45	-9.45	-24.27	-19.33	-20.91	-14.92	-17.42	-20.91
OVERALL STD DEV (S)	2.3	2.2	2.3	2.9	2.8	3.8	2.0	3.0
OVERALL REL STD DEV, %	26.20	23.76	27.59	35.77	31.96	44.22	21.83	37.72
SINGLE STD DEV, (SR)	2.2		1.5		1.9		2.2	
ANALYST REL DEV, %	24.44		17.76		22.56		25.55	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	11	13	13	13	12	12	13
TRUE CONC (C) UG/L	74.0	72.0	74.0	72.0	74.0	72.0	74.0	72.0
MEAN RECOVERY (X)	75.8	71.6	66.7	59.2	61.3	59.2	66.3	57.6
ACCURACY(%REL ERROR)	2.40	-0.59	-9.88	-17.78	-17.16	-17.77	-10.37	-20.04
OVERALL STD DEV (S)	18.3	11.6	14.1	14.0	13.9	12.7	9.5	10.8
OVERALL REL STD DEV, %	24.13	16.27	21.14	23.64	22.73	21.43	14.31	18.71
SINGLE STD DEV, (SR)	9.3		10.2		10.8		6.7	
ANALYST REL DEV, %	12.63		16.14		17.99		10.80	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	11	12	13	12	13	13	13	12
TRUE CONC (C) UG/L	591.0	622.0	591.0	622.0	591.0	622.0	591.0	622.0
MEAN RECOVERY (X)	543.5	510.8	453.1	441.8	454.4	462.5	439.8	504.4
ACCURACY(%REL ERROR)	-8.04	-17.88	-23.33	-28.98	-23.12	-25.64	-25.58	-18.90
OVERALL STD DEV (S)	109.6	115.0	122.5	105.2	99.1	85.3	176.6	113.7
OVERALL REL STD DEV, %	20.16	22.51	27.03	23.82	21.81	18.43	40.15	22.54
SINGLE STD DEV, (SR)	91.8		75.0		94.9		77.1	
ANALYST REL DEV, %	17.41		16.76		20.71		16.32	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-49

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR 1,4-DICHLOROBENZENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	13	12	13	13	10	11	12	12
TRUE CONC (C) UG/L	12.0	11.0	12.0	11.0	12.0	11.0	12.0	11.0
MEAN RECOVERY (X)	6.4	7.3	7.1	6.3	6.2	6.6	7.5	7.2
ACCURACY(%REL ERROR)	-46.47	-33.33	-41.22	-42.38	-48.25	-40.41	-37.50	-34.77
OVERALL STD DEV (S)	2.3	2.4	2.0	2.2	1.7	2.0	2.3	2.5
OVERALL REL STD DEV, %	35.45	32.30	28.39	34.96	27.95	30.92	31.07	35.22
SINGLE STD DEV, (SR)	1.9		1.2		0.9		1.8	
ANALYST REL DEV, %	28.17		17.92		13.45		24.98	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	15	14	15	15	13	12	11	13
TRUE CONC (C) UG/L	79.0	77.0	79.0	77.0	79.0	77.0	79.0	77.0
MEAN RECOVERY (X)	53.3	57.7	59.8	53.9	51.9	50.9	59.6	49.5
ACCURACY(%REL ERROR)	-32.56	-25.03	-24.33	-29.99	-34.29	-33.95	-24.57	-35.69
OVERALL STD DEV (S)	18.6	12.2	18.2	15.3	11.0	8.8	12.9	12.9
OVERALL REL STD DEV, %	34.98	21.20	30.50	28.46	21.16	17.38	21.71	26.03
SINGLE STD DEV, (SR)	8.8		14.0		9.5		9.5	
ANALYST REL DEV, %	15.84		24.60		18.55		17.44	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	15	13	15	15	14	14	14	14
TRUE CONC (C) UG/L	617.0	646.0	617.0	646.0	617.0	646.0	617.0	646.0
MEAN RECOVERY (X)	524.2	399.5	481.5	453.6	400.8	457.6	406.8	462.9
ACCURACY(%REL ERROR)	-15.04	-38.16	-21.97	-29.79	-35.04	-29.16	-34.07	-28.34
OVERALL STD DEV (S)	185.5	97.1	162.4	153.5	165.9	187.2	162.9	151.1
OVERALL REL STD DEV, %	35.39	24.31	33.73	33.84	41.40	40.91	40.04	32.65
SINGLE STD DEV, (SR)	145.6		57.8		164.7		111.5	
ANALYST REL DEV, %	31.52		12.36		38.37		25.64	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-50

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR 2-CHLORONAPHTHALENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	12	10	11	11	12	12	11	9
TRUE CONC (C) UG/L	5.0	4.5	5.0	4.5	5.0	4.5	5.0	4.5
MEAN RECOVERY (X)	4.1	4.3	4.4	3.7	4.0	4.1	5.2	3.9
ACCURACY(%REL ERROR)	-18.33	-3.78	-11.64	-17.37	-19.67	-8.52	4.18	-13.58
OVERALL STD DEV (S)	1.1	0.6	0.9	1.2	1.2	1.7	1.0	1.0
OVERALL REL STD DEV, %	27.37	13.25	21.03	31.01	28.87	40.91	18.52	26.71
SINGLE STD DEV, (SR)	0.8		0.7		1.3		1.0	
ANALYST REL DEV, %	19.67		18.11		31.62		21.22	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	12	11	11	13	13	10	11
TRUE CONC (C) UG/L	38.0	36.0	38.0	36.0	38.0	36.0	38.0	36.0
MEAN RECOVERY (X)	34.0	33.3	32.6	29.7	31.1	30.4	32.9	29.8
ACCURACY(%REL ERROR)	-10.58	-7.55	-14.19	-17.61	-18.27	-15.59	-13.34	-17.30
OVERALL STD DEV (S)	5.7	4.1	4.9	3.6	6.3	5.3	6.0	3.2
OVERALL REL STD DEV, %	16.82	12.43	15.11	12.27	20.29	17.43	18.29	10.80
SINGLE STD DEV, (SR)	3.5		3.0		5.5		3.6	
ANALYST REL DEV, %	10.55		9.64		17.90		11.61	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	10	11	11	11	13	13	11	11
TRUE CONC (C) UG/L	320.0	342.0	320.0	342.0	320.0	342.0	320.0	342.0
MEAN RECOVERY (X)	285.9	297.4	277.2	286.0	244.2	263.4	251.8	279.5
ACCURACY(%REL ERROR)	-10.66	-13.04	-13.38	-16.39	-23.68	-22.98	-21.32	-18.27
OVERALL STD DEV (S)	36.2	34.3	51.1	39.6	93.7	52.7	106.7	57.3
OVERALL REL STD DEV, %	12.65	11.55	18.44	13.85	38.36	20.00	42.37	20.50
SINGLE STD DEV, (SR)	18.0		32.2		76.6		51.7	
ANALYST REL DEV, %	6.17		11.45		30.17		19.47	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-51

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR 2,4-DINITROTOLUENE ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	12	10	12	10	12	11	9	9
TRUE CONC (C) UG/L	12.0	11.0	12.0	11.0	12.0	11.0	12.0	11.0
MEAN RECOVERY (X)	6.6	5.0	6.6	7.3	6.6	6.6	10.0	10.1
ACCURACY(%REL ERROR)	-45.28	-54.45	-45.07	-33.27	-44.96	-40.17	-16.48	-8.18
OVERALL STD DEV (S)	3.0	2.6	3.1	5.1	2.7	3.5	2.4	4.8
OVERALL REL STD DEV, %	44.93	51.21	47.35	69.01	40.47	52.67	23.99	47.28
SINGLE STD DEV, (SR)	1.8		2.1		1.9		3.6	
ANALYST REL DEV, %	30.30		30.57		28.41		35.36	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	13	14	14	14	13	8	11
TRUE CONC (C) UG/L	79.0	77.0	79.0	77.0	79.0	77.0	79.0	77.0
MEAN RECOVERY (X)	62.8	65.3	60.5	54.4	61.1	63.6	71.5	63.1
ACCURACY(%REL ERROR)	-20.47	-15.16	-23.35	-29.36	-22.65	-17.34	-9.54	-18.11
OVERALL STD DEV (S)	10.3	14.3	16.8	14.1	15.5	20.2	4.8	7.9
OVERALL REL STD DEV, %	16.45	21.82	27.81	25.92	25.36	31.71	6.72	12.59
SINGLE STD DEV, (SR)	5.1		11.4		10.9		3.2	
ANALYST REL DEV, %	7.94		19.91		17.45		4.78	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	14	15	12	13	14	9	9
TRUE CONC (C) UG/L	618.0	646.0	618.0	646.0	618.0	646.0	618.0	646.0
MEAN RECOVERY (X)	578.9	601.1	552.1	556.3	504.6	534.2	620.0	615.0
ACCURACY(%REL ERROR)	-6.32	-6.95	-10.67	-13.88	-18.35	-17.31	0.32	-4.80
OVERALL STD DEV (S)	129.5	173.1	227.1	109.1	212.8	141.0	53.9	139.1
OVERALL REL STD DEV, %	22.38	28.79	41.14	19.62	42.17	26.39	8.70	22.61
SINGLE STD DEV, (SR)	98.0		96.9		129.7		125.2	
ANALYST REL DEV, %	16.62		17.48		24.96		20.28	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-52

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR 4-BROMOPHENYL PHENYL ETHER ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	14	13	12	11	13	12	12	11
TRUE CONC (C) UG/L	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
MEAN RECOVERY (X)	5.8	5.3	5.8	4.7	5.7	5.6	6.0	4.7
ACCURACY(%REL ERROR)	-27.86	-25.75	-27.40	-35.10	-28.17	-22.69	-24.79	-35.23
OVERALL STD DEV (S)	1.9	1.2	1.7	1.8	2.2	1.9	1.6	1.6
OVERALL REL STD DEV, %	32.81	22.89	29.22	39.40	38.94	34.34	26.63	34.02
SINGLE STD DEV, (SR)	1.4		1.1		1.1		1.6	
ANALYST REL DEV, %	25.09		20.07		20.00		30.24	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	13	12	11	12	13	12	12
TRUE CONC (C) UG/L	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
MEAN RECOVERY (X)	52.8	50.8	51.3	48.6	49.7	48.6	46.9	39.8
ACCURACY(%REL ERROR)	-12.04	-10.81	-14.47	-14.80	-17.13	-14.68	-21.75	-30.12
OVERALL STD DEV (S)	8.4	7.4	5.4	5.0	7.4	9.0	12.7	13.0
OVERALL REL STD DEV, %	15.97	14.61	10.44	10.20	14.97	18.60	26.98	32.58
SINGLE STD DEV, (SR)	4.5		2.6		9.2		10.4	
ANALYST REL DEV, %	8.64		5.21		18.71		23.89	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	11	14	12	12	10	13	13	12
TRUE CONC (C) UG/L	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
MEAN RECOVERY (X)	485.1	477.1	451.7	417.4	428.8	423.7	333.9	415.1
ACCURACY(%REL ERROR)	-5.25	-12.94	-11.78	-23.83	-16.25	-22.67	-34.78	-24.26
OVERALL STD DEV (S)	39.0	123.8	52.4	161.6	44.6	80.1	127.5	103.5
OVERALL REL STD DEV, %	8.04	25.95	11.61	38.71	10.39	18.91	38.17	24.94
SINGLE STD DEV, (SR)	85.3		104.3		61.9		73.7	
ANALYST REL DEV, %	17.73		23.99		14.52		19.69	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-53

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

STATISTICAL SUMMARY FOR 4,4 -DDT ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	9	8	8	7	8	8	6	9
TRUE CONC (C) UG/L	8.0	7.0	8.0	7.0	8.0	7.0	8.0	7.0
MEAN RECOVERY (X)	2.7	2.8	2.4	2.4	2.4	2.1	2.1	1.9
ACCURACY(%REL ERROR)	-65.83	-60.18	-69.84	-65.92	-70.16	-69.64	-73.96	-73.49
OVERALL STD DEV (S)	1.5	0.9	0.9	1.2	1.4	1.4	0.9	1.0
OVERALL REL STD DEV, %	54.66	34.06	39.29	52.15	59.97	67.20	42.98	54.90
SINGLE STD DEV, (SR)	1.4		0.5		0.2		0.6	
ANALYST REL DEV, %	50.11		22.80		10.07		31.82	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	12	11	10	10	10	10	10
TRUE CONC (C) UG/L	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
MEAN RECOVERY (X)	32.8	31.9	29.3	19.0	15.5	18.4	17.9	18.9
ACCURACY(%REL ERROR)	-45.36	-44.08	-51.11	-66.72	-74.10	-67.75	-70.13	-66.79
OVERALL STD DEV (S)	20.7	16.3	23.1	9.6	11.5	10.6	11.4	14.0
OVERALL REL STD DEV, %	63.10	51.10	78.74	50.44	74.30	57.92	63.72	74.14
SINGLE STD DEV, (SR)	10.2		14.6		7.8		5.9	
ANALYST REL DEV, %	31.52		60.64		45.81		32.20	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	11	10	11	12	9	9
TRUE CONC (C) UG/L	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
MEAN RECOVERY (X)	451.8	560.6	518.4	370.3	327.4	488.1	367.8	352.8
ACCURACY(%REL ERROR)	-11.75	2.31	1.24	-32.42	-36.06	-10.93	-28.17	-35.62
OVERALL STD DEV (S)	387.6	311.1	420.9	206.4	182.6	346.1	238.3	272.6
OVERALL REL STD DEV, %	85.79	55.49	81.19	55.74	55.76	70.91	64.80	77.26
SINGLE STD DEV, (SR)	266.9		174.8		272.3		204.0	
ANALYST REL DEV, %	52.73		39.34		66.78		56.62	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-54

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR PENTACHLOROPHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	10	11	13	13	10	12	11	10
TRUE CONC (C) UG/L	13.0	14.4	13.0	14.4	13.0	14.4	13.0	14.4
MEAN RECOVERY (X)	14.3	15.5	13.6	16.5	15.0	14.3	13.5	13.1
ACCURACY(%REL ERROR)	9.69	7.32	4.67	14.48	15.08	-0.87	3.99	-8.89
OVERALL STD DEV (S)	8.8	9.3	9.1	10.8	5.1	8.2	7.7	8.3
OVERALL REL STD DEV, %	61.95	59.85	66.70	65.32	33.78	57.36	56.60	63.28
SINGLE STD DEV, (SR)	7.1		5.1		3.5		3.2	
ANALYST REL DEV, %	47.66		33.77		23.92		24.08	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	13	14	15	12	12	13	13
TRUE CONC (C) UG/L	65.0	72.0	65.0	72.0	65.0	72.0	65.0	72.0
MEAN RECOVERY (X)	58.5	64.1	59.8	56.7	58.6	54.7	51.1	55.8
ACCURACY(%REL EPROR)	-10.05	-10.94	-7.95	-21.23	-9.81	-23.99	-21.41	-22.48
OVERALL STD DEV (S)	16.4	20.2	26.3	12.0	14.0	18.9	15.9	22.0
OVERALL REL STD DEV, %	28.06	31.49	43.97	21.07	23.96	34.60	31.03	39.41
SINGLE STD DEV, (SR)	7.2		19.1		5.6		14.7	
ANALYST REL DEV, %	11.79		32.80		9.94		27.55	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	14	12	14	14	12	12	12	13
TRUE CONC (C) UG/L	480.0	432.0	480.0	432.0	480.0	432.0	480.0	432.0
MEAN RECOVERY (X)	545.3	359.8	406.3	364.1	382.7	447.9	348.2	327.2
ACCURACY(%REL ERROR)	13.60	-16.71	-15.35	-15.71	-20.27	3.67	-27.46	-24.26
OVERALL STD DEV (S)	292.3	69.8	181.6	183.5	117.0	180.4	85.2	96.8
OVERALL REL STD DEV, %	53.60	19.40	44.70	50.46	29.52	40.28	24.48	29.60
SINGLE STD DEV, (SR)	169.3		154.5		112.7		39.7	
ANALYST REL DEV, %	37.41		40.29		27.13		11.77	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

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TABLE 8-55

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR PHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	13	13	11	13	11	11	12	11
TRUE CONC (C) UG/L	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
MEAN RECOVERY (X)	4.1	3.9	3.3	4.9	4.1	4.0	4.3	4.1
ACCURACY(%REL ERROR)	-31.92	-44.84	-45.30	-29.89	-31.06	-42.99	-28.33	-41.56
OVERALL STD DEV (S)	2.2	1.8	1.9	5.1	1.7	1.8	1.7	1.2
OVERALL REL STD DEV, %	53.47	45.49	56.77	103.72	41.41	45.34	38.80	29.79
SINGLE STD DEV, (SR)	1.8		2.4		1.4		0.9	
ANALYST REL DEV, %	44.19		59.14		34.56		21.65	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	14	13	13	12	12	13	12
TRUE CONC (C) UG/L	70.0	63.0	70.0	63.0	70.0	63.0	70.0	63.0
MEAN RECOVERY (X)	31.4	31.8	35.6	26.4	37.5	31.2	37.7	27.3
ACCURACY(%REL ERROR)	-55.20	-49.59	-49.21	-58.12	-46.42	-50.53	-46.12	-56.69
OVERALL STD DEV (S)	12.5	8.9	19.1	10.8	7.5	11.0	16.6	7.9
OVERALL REL STD DEV, %	39.80	27.95	53.78	41.03	19.99	35.14	44.05	29.07
SINGLE STD DEV, (SR)	9.3		11.9		8.0		9.9	
ANALYST REL DEV, %	29.32		38.19		23.38		30.57	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	14	14	13	13	12	12	13	12
TRUE CONC (C) UG/L	420.0	467.0	420.0	467.0	420.0	467.0	420.0	467.0
MEAN RECOVERY (X)	172.8	188.6	176.4	205.2	169.8	222.4	183.6	197.5
ACCURACY(%REL ERROR)	-58.85	-59.62	-57.99	-56.06	-59.56	-52.38	-56.29	-57.71
OVERALL STD DEV (S)	79.9	52.2	60.5	66.7	46.0	73.2	49.6	79.7
OVERALL REL STD DEV, %	46.19	27.69	34.27	32.52	27.10	32.93	27.02	40.34
SINGLE STD DEV, (SR)	46.1		30.1		46.8		43.1	
ANALYST REL DEV, %	25.51		15.79		23.48		22.62	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-56

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR 2-CHLOROPHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	14	13	13	11	10	11	12	10
TRUE CONC (C) UG/L	7.0	8.0	7.0	8.0	7.0	8.0	7.0	8.0
MEAN RECOVERY (X)	6.1	5.9	5.9	5.4	5.1	5.9	6.0	5.9
ACCURACY(%REL ERROR)	-12.76	-25.77	-15.49	-32.84	-26.59	-26.70	-13.69	-25.88
OVERALL STD DEV (S)	2.9	2.4	1.7	2.4	1.1	1.1	2.1	1.3
OVERALL REL STD DEV, %	46.86	41.14	28.52	44.00	22.00	19.60	34.11	22.71
SINGLE STD DEV, (SR)	2.6		2.0		1.1		0.5	
ANALYST REL DEV, %	42.38		36.32		20.04		8.19	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	14	14	14	12	11	12	12
TRUE CONC (C) UG/L	80.0	72.0	80.0	72.0	80.0	72.0	80.0	72.0
MEAN RECOVERY (X)	69.3	63.2	61.5	56.6	66.6	54.8	62.9	53.4
ACCURACY(%REL ERROR)	-13.39	-12.17	-23.15	-21.07	-16.73	-23.95	-21.35	-25.86
OVERALL STD DEV (S)	19.1	12.9	19.0	19.7	16.8	7.4	13.7	16.8
OVERALL REL STD DEV, %	27.52	20.37	30.85	34.71	25.17	13.43	21.77	31.52
SINGLE STD DEV, (SR)	10.3		13.6		9.6		9.4	
ANALYST REL DEV, %	15.55		23.04		15.75		16.17	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	14	14	13	14	12	12	12	12
TRUE CONC (C) UG/L	480.0	533.0	480.0	533.0	480.0	533.0	480.0	533.0
MEAN RECOVERY (X)	330.4	383.3	347.3	385.2	312.6	400.7	330.1	380.4
ACCURACY(%REL ERROR)	-31.17	-28.09	-27.65	-27.73	-34.88	-24.82	-31.23	-28.63
OVERALL STD DEV (S)	119.5	109.4	105.7	127.7	88.4	104.7	35.0	83.5
OVERALL REL STD DEV, %	36.17	28.55	30.42	33.15	28.26	26.13	10.62	21.95
SINGLE STD DEV, (SR)	80.1		86.1		65.4		41.8	
ANALYST REL DEV, %	22.44		23.52		18.34		11.78	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

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TABLE 8-57

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR 2-METHYL-4,6-DINITROPHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	11	13	13	11	10	12	11	10
TRUE CONC (C) UG/L	80.0	72.0	80.0	72.0	80.0	72.0	80.0	72.0
MEAN RECOVERY (X)	40.2	48.4	52.4	42.8	67.2	52.1	77.1	47.1
ACCURACY(%REL ERROR)	-49.77	-32.82	-34.53	-40.53	-16.00	-27.62	-3.64	-34.54
OVERALL STD DEV (S)	26.2	19.9	30.9	24.8	30.7	26.8	41.1	21.5
OVERALL REL STD DEV, %	65.16	41.09	58.96	57.92	45.76	51.44	53.35	45.63
SINGLE STD DEV, (SR)	17.8		22.6		11.3		10.2	
ANALYST REL DEV, %	40.20		47.50		18.93		16.44	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	14	13	12	12	12	12	12
TRUE CONC (C) UG/L	160.0	144.0	160.0	144.0	160.0	144.0	160.0	144.0
MEAN RECOVERY (X)	117.5	137.9	145.0	101.8	169.7	130.6	159.9	134.8
ACCURACY(%REL ERROR)	-26.57	-4.22	-9.38	-29.30	6.08	-9.28	-0.09	-6.38
OVERALL STD DEV (S)	51.5	62.4	67.6	55.6	92.8	60.9	64.2	54.7
OVERALL REL STD DEV, %	43.83	45.23	46.61	54.58	54.70	46.64	40.16	40.56
SINGLE STD DEV, (SR)	55.0		37.2		35.1		17.7	
ANALYST REL DEV, %	43.08		30.15		23.40		12.00	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	13	12	11	12	12	12	12
TRUE CONC (C) UG/L	1067.0	960.0	1067.0	960.0	1067.0	960.0	1067.0	960.0
MEAN RECOVERY (X)	1059.2	1003.1	1066.5	886.6	1005.4	1113.0	1114.8	840.0
ACCUPACY(%REL ERROR)	-0.73	4.49	-0.04	-7.64	-5.77	15.94	4.48	-12.49
OVERALL STD DEV (S)	292.3	288.6	397.9	265.1	320.0	459.2	517.6	313.4
OVERALL REL STD DEV, %	27.59	28.77	37.31	29.90	31.82	41.26	46.43	37.31
SINGLE STD DEV, (SR)	144.9		291.8		243.5		265.6	
ANALYST REL DEV, %	14.05		29.88		22.99		27.17	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-58

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR 2-NITROPHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	13	14	15	15	13	13	14	14
TRUE CONC (C) UG/L	14.0	15.6	14.0	15.6	14.0	15.6	14.0	15.6
MEAN RECOVERY (X)	14.0	15.2	12.2	15.0	12.8	14.3	13.4	14.8
ACCURACY(%REL ERROR)	0.22	-2.43	-13.00	-3.80	-8.35	-8.63	-4.03	-5.04
OVERALL STD DEV (S)	6.2	7.2	4.6	7.3	5.9	5.8	6.8	5.6
OVERALL REL STD DEV, %	44.52	47.36	37.99	48.92	46.00	40.52	50.72	37.95
SINGLE STD DEV, (SR)	4.1		4.5		2.6		2.9	
ANALYST REL DEV, %	28.11		32.95		19.14		20.95	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	13	13	15	14	14	14	14	14
TRUE CONC (C) UG/L	70.0	78.0	70.0	78.0	70.0	78.0	70.0	78.0
MEAN RECOVERY (X)	71.6	87.5	71.2	69.1	69.0	74.3	65.9	68.6
ACCURACY(%REL ERROR)	2.27	12.16	1.74	-11.39	-1.36	-4.76	-4.40	-12.02
OVERALL STD DEV (S)	19.2	16.9	12.5	15.2	18.4	19.8	21.8	27.4
OVERALL REL STD DEV, %	26.87	19.36	17.50	21.98	26.71	26.72	32.65	39.92
SINGLE STD DEV, (SR)	17.9		15.6		11.8		11.5	
ANALYST REL DEV, %	22.56		22.16		16.49		16.90	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	14	14	13	13	13	14	14
TRUE CONC (C) UG/L	520.0	468.0	520.0	468.0	520.0	468.0	520.0	468.0
MEAN RECOVERY (X)	527.8	511.6	487.7	437.5	465.6	480.9	480.1	412.2
ACCURACY(%REL ERROR)	1.50	9.33	-6.22	-6.53	-10.47	2.75	-7.67	-11.92
OVERALL STD DEV (S)	157.6	189.3	159.1	122.6	139.3	134.2	148.1	144.8
OVERALL REL STD DEV, %	29.85	37.00	32.62	28.02	29.93	27.91	30.85	35.13
SINGLE STD DEV, (SR)	63.0		87.2		85.9		68.4	
ANALYST REL DEV, %	12.12		18.85		18.15		15.34	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

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TABLE 8-59

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR 2,4-DICHLOROPHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	15	15	13	12	12	12	12	13
TRUE CONC (C) UG/L	8.0	9.0	8.0	9.0	8.0	9.0	8.0	9.0
MEAN RECOVERY (X)	6.8	8.2	7.6	7.3	6.8	8.4	7.0	7.9
ACCURACY(%REL ERROR)	-14.88	-9.30	-4.42	-18.80	-14.79	-6.39	-11.68	-12.65
OVERALL STD DEV (S)	2.6	3.2	2.5	3.1	2.7	2.1	1.9	2.5
OVERALL REL STD DEV, %	38.69	39.64	32.40	41.97	39.52	24.89	27.34	31.32
SINGLE STD DEV, (SR)	2.4		2.1		1.4		1.0	
ANALYST REL DEV, %	31.46		28.44		18.86		13.21	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	14	13	13	12	12	13	13
TRUE CONC (C) UG/L	90.0	81.0	90.0	81.0	90.0	81.0	90.0	81.0
MEAN RECOVERY (X)	84.6	74.2	77.1	67.9	88.6	71.9	83.8	64.5
ACCURACY(%REL ERROR)	-6.01	-8.36	-14.31	-16.22	-1.50	-11.18	-6.89	-20.31
OVERALL STD DEV (S)	20.6	10.5	17.9	13.5	19.8	13.0	23.8	18.3
OVERALL REL STD DEV, %	24.39	14.11	23.15	19.83	22.35	18.10	28.35	28.32
SINGLE STD DEV, (SR)	13.3		13.0		11.2		17.3	
ANALYST REL DEV, %	16.77		17.92		13.97		23.38	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	14	14	13	13	12	12	12	13
TRUE CONC (C) UG/L	540.0	600.0	540.0	600.0	540.0	600.0	540.0	600.0
MEAN RECOVERY (X)	453.0	470.0	432.9	491.1	422.0	552.3	411.1	463.7
ACCURACY(%REL ERROR)	-16.12	-21.66	-19.83	-18.14	-21.85	-7.94	-23.87	-22.72
OVERALL STD DEV (S)	120.9	109.8	136.8	110.3	105.9	137.9	53.3	119.3
OVERALL REL STD DEV, %	26.69	23.35	31.61	22.47	25.10	24.96	12.97	25.74
SINGLE STD DEV, (SR)	67.9		99.8		74.7		47.0	
ANALYST REL DEV, %	14.72		21.60		15.32		10.74	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-60

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR 2,4-DIMETHYLPHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	11	9	11	9	10	11	9	10
TRUE CONC (C) UG/L	9.0	10.0	9.0	10.0	9.0	10.0	9.0	10.0
MEAN RECOVERY (X)	10.6	11.6	6.9	6.4	7.3	8.8	7.0	6.0
ACCURACY(%REL ERROR)	18.21	16.00	-23.54	-36.11	-18.56	-12.00	-22.22	-39.80
OVERALL STD DEV (S)	2.8	5.2	3.9	4.5	3.0	2.6	4.5	3.1
OVERALL REL STD DEV, %	26.67	44.59	57.29	70.04	41.59	30.09	64.73	51.46
SINGLE STD DEV, (SR)	3.0		2.4		1.9		1.9	
ANALYST REL DEV, %	27.36		36.27		23.02		29.52	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	9	10	11	10	11	11	11	11
TRUE CONC (C) UG/L	100.0	90.0	100.0	90.0	100.0	90.0	100.0	90.0
MEAN RECOVERY (X)	72.4	79.3	58.7	52.6	63.5	59.8	53.7	44.3
ACCURACY(%REL ERROR)	-27.59	-11.90	-41.32	-41.58	-36.48	-33.56	-46.28	-50.80
OVERALL STD DEV (S)	6.7	16.4	24.0	21.9	28.9	19.2	32.9	20.1
OVERALL REL STD DEV, %	9.24	20.70	40.93	41.65	45.47	32.05	61.33	45.44
SINGLE STD DEV, (SR)	11.7		8.0		19.2		17.6	
ANALYST REL DEV, %	15.47		14.39		31.12		35.97	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	11	11	11	11	11	10	10	11
TRUE CONC (C) UG/L	600.0	667.0	600.0	667.0	600.0	667.0	600.0	667.0
MEAN RECOVERY (X)	371.6	486.0	346.2	415.3	350.8	438.0	277.6	354.3
ACCURACY(%REL ERROR)	-38.06	-27.14	-42.29	-37.74	-41.54	-34.33	-53.73	-46.87
OVERALL STD DEV (S)	159.8	84.4	139.5	154.6	162.4	178.1	186.4	212.2
OVERALL REL STD DEV, %	42.99	17.36	40.28	37.22	46.31	40.65	67.15	59.87
SINGLE STD DEV, (SR)	79.2		132.2		113.3		71.6	
ANALYST REL DEV, %	18.46		34.71		28.72		22.67	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

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TABLE 8-61

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR 2,4-DINITROPHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	9	11	10	9	9	10	11	11
TRUE CONC (C) UG/L	100.0	90.0	100.0	90.0	100.0	90.0	100.0	90.0
MEAN RECOVERY (X)	63.2	59.5	49.5	46.2	74.8	57.5	72.5	63.6
ACCURACY(%REL ERROR)	-36.84	-33.93	-51.52	-48.69	-25.19	-36.11	-27.45	-29.34
OVERALL STD DEV (S)	52.4	52.6	36.5	32.9	48.4	45.3	39.6	50.9
OVERALL REL STD DEV, %	82.95	88.40	75.37	71.14	64.75	78.70	54.57	80.02
SINGLE STD DEV, (SR)	25.2		23.2		18.3		21.8	
ANALYST REL DEV, %	41.17		49.03		27.65		32.05	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	14	11	10	10	11	12	10
TRUE CONC (C) UG/L	200.0	180.0	200.0	180.0	200.0	180.0	200.0	180.0
MEAN RECOVERY (X)	129.4	121.9	187.2	128.0	168.9	211.8	169.9	146.9
ACCURACY(%REL ERROR)	-35.32	-32.29	-6.42	-28.89	-15.56	17.64	-15.06	-18.36
OVERALL STD DEV (S)	85.0	71.3	118.8	83.8	46.2	124.7	90.5	70.6
OVERALL REL STD DEV, %	65.69	58.47	63.50	65.44	27.33	58.91	53.29	48.02
SINGLE STD DEV, (SR)	52.5		44.5		67.5		57.4	
ANALYST REL DEV, %	41.76		28.27		35.48		36.24	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	13	13	11	11	12	9	10	12
TRUE CONC (C) UG/L	1333.0	1200.0	1333.0	1200.0	1333.0	1200.0	1333.0	1200.0
MEAN RECOVERY (X)	2151.9	2074.1	1926.1	1805.2	2272.3	1658.6	1527.4	1649.3
ACCURACY(%REL ERROR)	61.43	72.84	44.50	50.43	70.46	38.22	14.58	37.44
OVERALL STD DEV (S)	926.9	934.6	1019.9	594.1	1121.0	203.2	460.0	729.2
OVERALL REL STD DEV, %	43.08	45.06	52.95	32.91	49.33	12.25	30.12	44.21
SINGLE STD DEV, (SR)	787.7		750.4		463.7		344.2	
ANALYST REL DEV, %	37.29		40.22		23.59		21.67	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-62

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR 4-CHLORO-3-METHYLPHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	15	15	13	11	13	13	12	12
TRUE CONC (C) UG/L	9.0	10.0	9.0	10.0	9.0	10.0	9.0	10.0
MEAN RECOVERY (X)	8.0	8.5	7.8	8.2	6.8	8.6	8.3	8.0
ACCURACY(%REL ERROR)	-10.85	-14.97	-13.50	-18.36	-24.70	-14.38	-8.24	-20.42
OVERALL STD DEV (S)	3.4	4.1	3.1	3.8	3.4	3.3	4.3	3.1
OVERALL REL STD DEV, %	42.14	48.11	40.06	46.85	50.52	38.69	51.67	38.86
SINGLE STD DEV, (SR)	2.6		3.0		1.7		2.4	
ANALYST REL DEV, %	31.68		37.08		22.19		30.02	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	14	13	12	13	13	12	12
TRUE CONC (C) UG/L	100.0	90.0	100.0	90.0	100.0	90.0	100.0	90.0
MEAN RECOVERY (X)	83.3	80.0	80.1	62.8	85.2	73.9	81.2	69.5
ACCURACY(%REL ERROR)	-16.69	-11.09	-19.88	-30.20	-14.77	-17.94	-18.78	-22.77
OVERALL STD DEV (S)	35.6	17.5	22.3	26.1	24.2	19.8	17.7	19.1
OVERALL REL STD DEV, %	42.68	21.88	27.89	41.52	28.38	26.80	21.79	27.52
SINGLE STD DEV, (SR)	24.9		12.7		14.7		9.0	
ANALYST REL DEV, %	30.51		17.77		18.50		11.98	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	14	14	12	12	13	13	12	12
TRUE CONC (C) UG/L	600.0	667.0	600.0	667.0	600.0	667.0	600.0	667.0
MEAN RECOVERY (X)	472.5	569.2	454.8	553.3	425.4	565.5	444.3	502.1
ACCURACY(%REL ERROR)	-21.25	-14.66	-24.19	-17.05	-29.11	-15.22	-25.95	-24.72
OVERALL STD DEV (S)	125.2	168.1	108.9	117.2	146.8	150.5	114.9	178.7
OVERALL REL STD DEV, %	26.50	29.53	23.94	21.18	34.50	26.61	25.85	35.58
SINGLE STD DEV, (SR)	91.2		104.0		91.1		79.9	
ANALYST REL DEV, %	17.50		20.63		18.38		16.88	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

TABLE 8-63

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR 4-NITROPHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	9	13	8	8	9	9	9	8
TRUE CONC (C) UG/L	21.6	24.0	21.6	24.0	21.6	24.0	21.6	24.0
MEAN RECOVERY (X)	13.0	12.4	9.1	12.6	14.8	12.7	21.4	15.3
ACCURACY(%REL ERROR)	-39.71	-48.24	-57.99	-47.50	-31.43	-47.13	-1.03	-36.20
OVERALL STD DEV (S)	6.7	10.9	5.7	8.7	9.4	8.4	16.6	9.7
OVERALL REL STD DEV, %	51.43	87.38	62.62	69.22	63.47	66.58	77.44	63.50
SINGLE STD DEV, (SR)	7.3		5.5		4.0		5.5	
ANALYST REL DEV, %	57.34		50.99		29.17		30.13	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	14	14	11	10	12	12	11	12
TRUE CONC (C) UG/L	108.0	120.0	108.0	120.0	108.0	120.0	108.0	120.0
MEAN RECOVERY (X)	62.4	71.2	55.2	67.0	69.0	64.0	68.3	64.1
ACCURACY(%REL ERROR)	-42.21	-40.67	-48.85	-44.14	-36.08	-46.69	-36.78	-46.62
OVERALL STD DEV (S)	31.5	34.7	23.3	30.6	32.3	25.5	30.3	25.0
OVERALL REL STD DEV, %	50.43	48.77	42.25	45.60	46.73	39.84	44.32	39.04
SINGLE STD DEV, (SR)	31.2		17.5		18.8		17.3	
ANALYST REL DEV, %	46.70		28.66		28.20		26.21	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	14	13	12	13	12	12	12	11
TRUE CONC (C) UG/L	800.0	720.0	800.0	720.0	800.0	720.0	800.0	720.0
MEAN RECOVERY (X)	523.1	433.9	420.2	435.3	429.4	456.6	515.4	297.2
ACCURACY(%REL ERROR)	-34.61	-39.73	-47.47	-39.54	-46.33	-36.59	-35.58	-58.73
OVERALL STD DEV (S)	260.9	175.9	230.1	171.3	181.9	235.8	261.5	95.3
OVERALL REL STD DEV, %	49.88	40.55	54.75	39.35	42.37	51.64	50.74	32.07
SINGLE STD DEV, (SR)	164.9		133.8		146.4		211.2	
ANALYST REL DEV, %	34.45		31.29		33.04		51.99	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

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TABLE 8-64

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
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ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

STATISTICAL SUMMARY FOR 2,4,6-TRICHLOROPHENOL ANALYSES BY WATER TYPE

	WATER 1		WATER 2		WATER 3		WATER 4	
LOW YOUDEN PAIR	1	2	1	2	1	2	1	2
NUMBER OF DATA POINTS	13	13	12	14	13	13	13	13
TRUE CONC (C) UG/L	11.9	13.2	11.9	13.2	11.9	13.2	11.9	13.2
MEAN RECOVERY (X)	10.1	12.3	10.0	15.0	9.8	11.6	11.9	11.1
ACCURACY(%REL ERROR)	-15.13	-7.17	-15.83	13.31	-17.78	-12.00	0.32	-15.68
OVERALL STD DEV (S)	3.2	6.0	3.3	6.2	4.6	3.1	5.4	3.0
OVERALL REL STD DEV, %	31.49	49.23	32.91	41.48	47.20	26.54	45.34	27.01
SINGLE STD DEV, (SR)	4.0		4.6		2.1		4.1	
ANALYST REL DEV, %	35.75		36.92		19.62		35.63	
MEDIUM YOUDEN PAIR	3	4	3	4	3	4	3	4
NUMBER OF DATA POINTS	12	12	13	12	13	13	13	12
TRUE CONC (C) UG/L	59.0	66.0	59.0	66.0	59.0	66.0	59.0	66.0
MEAN RECOVERY (X)	60.0	62.9	55.8	55.8	52.7	60.8	51.8	54.5
ACCURACY(%REL ERROR)	1.78	-4.71	-5.50	-15.40	-10.65	-7.93	-12.15	-17.41
OVERALL STD DEV (S)	18.4	8.1	8.3	9.2	13.4	16.0	10.5	13.2
OVERALL REL STD DEV, %	30.72	12.91	14.87	16.45	25.37	26.34	20.34	24.16
SINGLE STD DEV, (SR)	11.1		7.6		10.6		6.3	
ANALYST REL DEV, %	18.11		13.65		18.75		11.91	
HIGH YOUDEN PAIR	5	6	5	6	5	6	5	6
NUMBER OF DATA POINTS	12	12	12	13	13	13	13	13
TRUE CONC (C) UG/L	440.0	396.0	440.0	396.0	440.0	396.0	440.0	396.0
MEAN RECOVERY (X)	390.3	322.5	378.8	353.6	349.7	364.3	364.1	321.7
ACCURACY(%REL ERROR)	-11.29	-18.55	-13.91	-10.70	-20.51	-8.00	-17.24	-18.75
OVERALL STD DEV (S)	123.7	59.1	83.0	88.2	109.4	126.2	85.6	94.3
OVERALL REL STD DEV, %	31.69	18.33	21.90	24.95	31.29	34.65	23.50	29.31
SINGLE STD DEV, (SR)	61.9		84.7		51.6		38.2	
ANALYST REL DEV, %	17.36		23.14		14.45		11.13	

WATER LEGEND

1 - DISTILLED WATER
2 - TAP WATER
3 - SURFACE WATER
4 - INDUSTRIAL EFFLUENT

$$\bar{X} = a + b \cdot C \qquad (10)$$

was fitted to the data by regression techniques.

It is often the case that the true concentration values vary over a wide range. In such cases, the mean recovery statistics associated with the larger concentration values tend to dominate the fitted regression line producing relatively larger errors in the estimates of mean recovery at the lower concentration values. In order to eliminate this problem, a weighted least squares technique was used to fit the mean recovery data to the true concentration values. The weighted least squares technique was performed by dividing both sides of Equation 10 by C resulting in Equation 11.

$$\frac{\bar{X}}{C} = a \cdot \frac{1}{C} + b \ . \qquad (11)$$

The $(\bar{X}/C)$ values were regressed against the $(1/C)$ values using ordinary least squares to obtain estimates for the values of a and b. (This is equivalent to performing a weighted least squares with weights $w = 1/C^2$; see Reference [5], page 108 for details). Equation 11 can easily be converted to the desired relationship given by Equation 10. The intercept (b) from Equation 11 becomes the slope (b) for Equation 10 and the slope (a) from Equation 11 becomes the intercept (a) for Equation 10. Equation 10 can be used to calculate the percent recovery over the applicable range of concentrations used in the study.

The percent recovery is given by

$$\text{Percent Recovery} = \left[\frac{a + b \cdot C}{C}\right] \times 100 = \left[\frac{a}{C} + b\right] \times 100 \qquad (12)$$

If the absolute value of the ratio (a/C) is small relative to the slope (b) for concentrations in the low end of the range of concentration levels used in the study, then the percent recovery can be approximated by b x 100. For example, suppose the true concentration values range from 25 µg/L to 515 µg/L, the fitted line is given by $X = -0.20 + 0.85 \cdot C$. The percent recovery would be approximated by (0.85) x 100 = 85% over the specified range of 25 µg/L to 515 µg/L.

If the ratio (a/C) is not small relative to the slope (b), then the percent recovery depends upon the true concentration (C), and it must be evaluated at each concentration value within the specified range.

Statement of Method Precision

The precision of the method is characterized by the relationships between precision statistics (S and SR) and mean recovery ($\bar{X}$). In order to obtain a mathematical expression for these relationships, regression lines of the form

$$S = d + e \cdot \bar{X} \tag{13}$$

and

$$SR = f + g \cdot \bar{X}^* \tag{14}$$

were fitted to the data.

As discussed previously with respect to accuracy, the values of $\bar{X}$ and $\bar{X}^*$ often vary over a wide range. In such cases the standard deviation statistics associated with the larger mean recovery values will dominate the regression lines. This will produce relatively larger errors in the estimates of S and SR at

the lower mean recovery values. Therefore, a weighted least squares technique was also used to establish the values of the parameters d, e, f, and g in Equations 13 and 14. The weighted least squares technique was performed by dividing both sides of Equation 13 by X resulting in Equation 15

$$\frac{S}{\bar{X}} = d \cdot \frac{1}{\bar{X}} + e \qquad (15)$$

and by dividing both sides of Equation 14 by $\bar{X}^*$ resulting in Equation 16

$$\frac{SR}{\bar{X}^*} = f \cdot \frac{1}{\bar{X}^*} + g \; . \qquad (16)$$

The $(S/\bar{X})$ values were regressed against the $(1/\bar{X})$ values and the $(SR/\bar{X}^*)$ values were regressed against the $(1/\bar{X}^*)$ values using ordinary least squares to obtain estimates for the parameters d, e, f, and g.

Equations 13 and 14 were obtained from Equations 15 and 16 in a manner similar to that discussed for mean recovery. The slope (d) for Equation 15 is the intercept (d) for Equation 13. Similarly, the slope (f) for Equation 16 is the intercept (f) for Equation 14, and the intercept (g) for Equation 16 is the slope (g) for Equation 14.

Given Equations 13 and 14, the percent relative overall standard deviation and the percent relative single-analyst standard deviation are

$$\%RSD = \left[\frac{d}{\bar{X}} + e\right] \times 100 \qquad (17)$$

and

$$\%\text{RSD-SA} = \left[\frac{f}{\bar{X}^*} + g\right] \times 100 \qquad (18)$$

respectively. If the absolute value of the ratio $(d/\bar{X})$ is small relative to the slope (e), then the percent relative overall standard deviation can be approximated by (e x 100) over the applicable range of mean recovery values. Similarly if the ratio $(f/\bar{X}^*)$ is small relative to the slope (g), then the percent relative single-analyst standard deviation can be approximated by (g x 100) over the applicable range of mean recovery values.

If the ratios $(d/\bar{X})$ and $(f/\bar{X}^*)$ are not small relative to the slopes (e) and (f), then the percent relative standard deviations depend upon the values of the mean recovery statistics $\bar{X}$ and $\bar{X}^*$, and they should be evaluated separately for each value of $\bar{X}$ and $\bar{X}^*$.

COMPARISON OF ACCURACY AND PRECISION ACROSS WATER TYPES

It is possible that the accuracy and precision values of Method 625 depend upon the type of water being analyzed. The summary statistics $\bar{X}$, S, and S_r are calculated separately for each concentration level within each water type. They can be compared across water types in order to obtain information about the effects of water type on accuracy and precision. However, the use of these summary statistics in this manner has several disadvantages. First, it is cumbersome because there are 24 mean recovery statistics $(\bar{X})$ (6 ampuls x 4 waters), 24 precision statistics (S), and 12 precision statistics (S_r) calculated for each compound. Comparison of these statistics across concentration levels and across water types becomes unwieldy. Second, the statistical

properties of this type of comparison procedure are difficult to determine. Finally, due to variation associated with $\bar{X}$, S, and S_r, comparisons based on these statistics can lead to inconsistent conclusions about the effect of water type. For example, distilled water may produce a significantly lower value than drinking water for the precision statistic S at a high concentration, but a significantly higher value for S at a low concentration.

An alternative approach, described in detail in Reference 2, has been developed to test for the effects of water type. This alternative approach is based on the concept of summarizing the average effect of water type across concentration levels rather than studying the local effects at each concentration level. If significant differences are established by this alternative technique, then the summary statistics can be used for further local analysis.

To check for the effect of water type on the analytical results, a global F-test of the accuracy and precision is calculated. If the global F-test shows no water type effects, no further calculations are required. If the F-test shows significance of water type, calculations are performed to determine if the individual differences are statistically significant by calculating a confidence interval for the difference between water type. A statistical significance is established if at least one of the confidence intervals for the differences does not include zero.

The global F-test for the effect of water type is calculated using the following statistical model. If X_{ijk} denotes the measurement reported by laboratory i, for water type j, and ampul k, then

$$X_{ijk} = \beta_j \cdot C_k^{\gamma j} \cdot L_i \cdot \epsilon_{ijk} \qquad (19)$$

where $i = 1,2, \ldots, 15$

$j = 1,2$

$k = 1,2, \ldots, 6$

Model components β_j and γ_j are fixed parameters that determine the effect of water type j on the behavior of the observed measurements (X_{ijk}). The parameter C_k is the prepared concentration level associated with ampule k. The model component L_i is a random factor which accounts for the systematic error associated with laboratory i. The model component ε_{ijk} is the random factor that accounts for the within-laboratory error.

The model is designed to approximate the global behavior of the data. The multiplicative structure was chosen because of two important properties. First, it allows for a possible curvilinear relationship between the data (X_{ijk}) and the true concentration level (C_k) through the use of the exponent γ_j on C_k. This makes the model more flexible in the data and the concentration level C_k in this model. This property is important because it is typical of interlaboratory data collected under conditions where the true concentration levels vary widely.

Accuracy is related directly to the mean recovery or expected value of the measurements (X_{ijk}). The expected value for the data modeled by Equation 19 is

$$E(X_{ijk}) = \beta_j \cdot C_k^{\gamma j} \cdot E(L_i \cdot \varepsilon_{ijk}) \qquad (20)$$

Precision is related to the variability in the measurements (X_{ijk}). The variance of the data modeled by Equation 19 is

$$Var(X_{ijk}) = \left[\beta_j \cdot C_k^{\gamma j}\right]^2 Var(L_i \cdot \varepsilon_{ijk}), \qquad (21)$$

which is an increasing function of C_k. (See Reference 2 for a complete discussion of this model.)

The accuracy and precision of Method 625 depend upon water type through Equations 20 and 21 and the parameters β_j and γ_j. If the β_j and γ_j vary with j (i.e., vary across water type), then the accuracy and precision of the method also vary across water type.

To determine if these parameters do vary across water type and to compare their values, they must be estimated from the laboratory data using regression techniques. Equation 19 represents the basic model. However, taking natural logarithms of both sides of Equation 19, the following straight line regression model is obtained.

$$\ln X_{ijk} = \ln \beta_j + \gamma_j \ln C_k + \ln L_i + \ln \varepsilon_{ijk} \qquad (22)$$

The parameter $\ln \beta_j$ is the intercept, and γ_j is the slope of the regression line associated with water type j. It is assumed that $\ln L_i$ is normally distributed with mean 0 and variance σ_L^2, that $\ln \varepsilon_{ijk}$ is normally distributed with mean 0 and variance σ_ε^2, and that the $\ln L_i$ and $\ln \varepsilon_{ijk}$ terms are independent.

Based on Equation 22, the comparison of water types reduces to the comparison of straight lines. Distilled water is viewed as a control, and each of the remaining lines is compared directly to the line for distilled water.

Using the data on the log-log scale and regression techniques, the parameter $\ln \beta_j$ (and hence β_j) and γ_j can be estimated. These estimates are then used to formally test the null (no water-type effect) versus alternative (water-type effect) hypotheses

$$H_0: \ln \beta_j - \ln \beta_1 = 0 \text{ and } \gamma_j - \gamma_1 = 0 \text{ for } j = 2 \qquad (23)$$

versus

$$H_A: \ln \beta_j - \ln \beta_1 \neq 0 \text{ and/or } \gamma_j - \gamma_1 \neq 0 \text{ for some } j = 2 \quad (24)$$

The null hypothesis (H_0) is tested against the alternative hypothesis (H_A) using an F-statistic. The probability of obtaining the value of an F-statistic as large as the value which was actually observed, Prob(F > F OBS), is calculated under the assumption that H_0 is true. H_0 is rejected in favor of H_A if Prob(F > F OBS) is less than 0.05, showing a possible effect due to water type.

If H_0 is not rejected, then there is no evidence in the data that the β_j vary with j or that the γ_j vary with j. Therefore, there is no evidence of an effect due to water type on the accuracy or precision of the method. If H_0 is rejected, then some linear combination of the differences ($\ln \beta_j - \ln \beta$) and ($\gamma_j - \gamma_1$) is statistically different from zero. However, this does not guarantee there will be a statistically significant direct effect attributable to any specific water type since the overall F test can be overly sensitive to minor systematic effect common to several water types. The effect due to water type is judged to be statistically significnat only if one of the differences ($\ln \beta_j - \ln \beta_1$) and/or ($\gamma_j - \gamma_1$), is statistically different from zero. This is determined by checking the simultaneous 95% confidence intervals which are constructed for each of these differences. Each true difference can be stated to lie within its respective confidence interval with 95% confidence. If zero is contained within the confidence interval, then there is no evidence that the corresponding difference is significantly different from zero and no further calculations are required.

If at least one of the confidence intervals for the differences ($\ln \beta_j - \ln \beta_1$) or ($\gamma_j - \gamma_1$) fails to include zero, then the

statistical significance of the effect due to water type has been established. Even if a statistically significant effect due to water type were to be established, that would not necessarily mean that the effect would be of practical importance. Practical importance is related to the size and interpretation of the differences. The computer generated data for the point estimates, analysis of variance, and confidence intervals are shown in Tables 9-1 through 9-63 for each compound, with the exception of delta-BHC. Because of insufficient ampule data for delta-BHC in surface water, the multiplicative model analysis was not performed.

The comparison of accuracy and precision across water types just discussed is based on the assumption that Equation (19) approximately models the data. It is clear that in practical monitoring programs of this type such models cannot model the data completely in every case. This analysis, therefore, is viewed as a screening procedure which identifies those cases where differences in water types are likely to be present. A more detailed, local analysis can then be pursued using the basic summary statistics for precision and accuracy.

TABLE 9-1

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
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ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON ACENAPHTHENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .98543

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0498	.0070
3	-.0644	-.0070
4	-.1070	.0025

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	721.14235	721.14235		
REG(WATER/DISTILLED)	6	.50844	.08474	1.93	.0770
ERROR	268	11.79656	.04402		
TOTAL	275	733.44735			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	-.0498	(-.3125 , .2129)	.0070	(-.0534 , .0674)
3	-.0644	(-.3112 , .1824)	-.0070	(-.0637 , .0497)
4	-.1070	(-.3571 , .1430)	.0025	(-.0550 , .0600)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-2

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
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ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON ACENAPHTHYLENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .97457

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0283	-.0071
3	-.0305	.0185
4	-.1222	.0214

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	624.84221	624.84221		
REG(WATER/DISTILLED)	6	.28072	.04679	.61	.7222
ERROR	233	17.87006	.07670		
TOTAL	240	642.99299			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.0283	(-.3382 , .3947)	-.0071	(-.0888 , .0747)
3	-.0305	(-.3928 , .3318)	.0185	(-.0624 , .0994)
4	-.1222	(-.4942 , .2499)	.0214	(-.0618 , .1046)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-3

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON ALDRIN ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .95643

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.2371	.0115
3	-.2716	-.0106
4	-.6768	.0314

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	619.06280	619.06280		
REG(WATER/DISTILLED)	6	9.99875	1.66646	9.30	.0000
ERROR	250	44.78745	.17915		
TOTAL	257	673.84900			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.2371	(-.8159 , .3416)	.0115	(-.1101 , .1332)
3	-.2716	(-.8537 , .3105)	-.0106	(-.1320 , .1109)
4	-.6768	(-1.2550 , -.0986)	.0314	(-.0892 , .1520)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-4

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON ANTHRACENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .96467

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0584	-.0023
3	.0750	-.0096
4	.0984	-.0425

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	917.16202	917.16202		
REG(WATER/DISTILLED)	6	1.00493	.16749	1.11	.3563
ERROR	261	39.35394	.15078		
TOTAL	268	957.52089			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.0584	(-.3740 , .4908)	-.0023	(-.0954 , .0908)
3	.0750	(-.3528 , .5028)	-.0096	(-.1011 , .0819)
4	.0984	(-.3280 , .5248)	-.0425	(-.1336 , .0486)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-5

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (T) **

EFFECT OF WATER TYPE ON B-BNC ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .99979

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0000	-.0089
3	-.0339	-.0047
4	-.1713	.0217

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	717.33790	717.33790		
REG(WATER/DISTILLED)	6	.29152	.04859	.88	.5077
ERROR	265	14.57916	.05502		
TOTAL	272	732.20858			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	.0000	(-.3196 , .3195)	-.0089	(-.0736 , .0558)
3	-.0339	(-.3567 , .2889)	-.0047	(-.0701 , .0607)
4	-.1713	(-.4966 , .1539)	.0217	(-.0437 , .0872)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-6

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON BENZO(A)ANTHRACENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.01343

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0916	.0020
3	-.2601	.0014
4	-.6356	.0356

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	447.69092	447.69092		
REG(WATER/DISTILLED)	6	8.93646	1.48941	9.00	.0000
ERROR	258	42.68441	.16544		
TOTAL	265	499.31179			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0916	(-.7719 , .5887)	.0020	(-.1494 , .1534)
3	-.2601	(-.9388 , .4186)	.0014	(-.1492 , .1520)
4	-.6356	(-1.3079 , .0366)	.0356	(-.1136 , .1848)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-7

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON BENZO(A)PYRENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.05245

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.2957	.0487
3	-.1654	-.0022
4	-.4106	-.0132

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	1051.70188	1051.70188		
REG(WATER/DISTILLED)	6	8.11593	1.35266	4.54	.0002
ERROR	252	75.15815	.29825		
TOTAL	259	1134.97597			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.2957	(-.9172 , .3258)	.0487	(-.0837 , .1811)
3	-.1654	(-.7815 , .4507)	-.0022	(-.1340 , .1295)
4	-.4106	(-1.0408 , .2196)	-.0132	(-.1472 , .1209)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-8

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON BENZO(B)FLUORANTHENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.05148

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.5625	.0535
3	-.6927	.0581
4	-.5015	-.0048

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	873.00602	873.00602		
REG(WATER/DISTILLED)	6	11.80274	1.96712	6.92	.0000
ERROR	281	79.93575	.28447		
TOTAL	288	964.74450			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.5625	(-1.2653 , .1403)	.0535	(-.0945 , .2015)
3	-.6927	(-1.3808 , -.0045)	.0581	(-.0873 , .2034)
4	-.5015	(-1.1783 , .1753)	-.0048	(-.1479 , .1382)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-9

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON BIS(2-CHLOROETHYL)ETHER ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.03380

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0250	.0197
3	.3651	-.0698
4	.2012	-.0164

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	678.09999	678.09999		
REG(WATER/DISTILLED)	6	1.32751	.22125	.72	.6310
ERROR	264	80.73566	.30582		
TOTAL	271	760.16317			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0250	(-.8690 , .8189)	.0197	(-.1457 , .1851)
3	.3651	(-.4577 , 1.1879)	-.0698	(-.2317 , .0921)
4	.2012	(-.5996 , 1.0020)	-.0164	(-.1746 , .1417)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-10

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON DI-N-BUTYLPHTHALATE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .98031

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0616	-.0111
3	.3699	-.0634
4	.0494	-.0201

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	972.04279	972.04279		
REG(WATER/DISTILLED)	6	1.31805	.21968	1.26	.2758
ERROR	277	48.27602	.17428		
TOTAL	284	1021.63686			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	.0616	(-.4045 , .5277)	-.0111	(-.1075 , .0854)
3	.3699	(-.0778 , .8177)	-.0634	(-.1567 , .0299)
4	.0494	(-.4165 , .5154)	-.0201	(-.1153 , .0751)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-11

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON DIBENZO(A,H)ANTHRACENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.00522

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-1.8185	.3158
3	-1.7335	.2626
4	-2.2086	.3026

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	680.31979	680.31979		
REG(WATER/DISTILLED)	6	33.35656	5.55943	10.71	.0000
ERROR	224	116.26439	.51904		
TOTAL	231	829.94075			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-1.8185	(-2.9121 , -.7249)	.3158	(.0782 , .5533)
3	-1.7335	(-2.8616 , -.6054)	.2626	(.0161 , .5092)
4	-2.2086	(-3.3149 , -1.1024)	.3026	(.0630 , .5423)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-12

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON DIETHYL PHTHALATE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .97574

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0991	-.0027
3	.3349	-.0250
4	.1573	.0241

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	908.80561	908.80561		
REG(WATER/DISTILLED)	6	6.67607	1.11268	3.76	.0013
ERROR	264	78.04764	.29564		
TOTAL	271	993.52932			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	-.0991	(-.7411 , .5428)	-.0027	(-.1329 , .1275)
3	.3349	(-.3120 , .9819)	-.0250	(-.1562 , .1063)
4	.1573	(-.5047 , .8193)	.0241	(-.1104 , .1587)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-13

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON ENDOSULFAN SULFATE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .92922

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-1.1117	.2342
3	-.6811	.1532
4	-1.2530	.2328

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	543.62216	543.62216		
REG(WATER/DISTILLED)	6	4.41389	.73565	1.96	.0734
ERROR	178	66.73233	.37490		
TOTAL	185	614.76838			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

	INTERCEPT(WATER-DISTILLED)		SLOPE(WATER-DISTILLED)	
WATER	ESTIMATE	INTERVAL	ESTIMATE	INTERVAL
2	-1.1117	(-2.2662 , .0428)	.2342	(.0079 , .4605)
3	-.6811	(-1.8687 , .5065)	.1532	(-.0776 , .3841)
4	-1.2530	(-2.4430 , -.0631)	.2328	(.0023 , .4632)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-14

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON FLUORANTHENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .94382

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0408	-.0108
3	.1691	-.0600
4	.0217	-.0337

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	882.86342	882.86342		
REG(WATER/DISTILLED)	6	1.34736	.22456	1.13	.3424
ERROR	268	53.04681	.19794		
TOTAL	275	937.25759			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.0408	(-.4442 , .5259)	-.0108	(-.1116 , .0900)
3	.1691	(-.3259 , .6641)	-.0600	(-.1629 , .0429)
4	.0217	(-.4729 , .5164)	-.0337	(-.1370 , .0696)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-15

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON HEPTACHLOR ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.09431

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0846	.0019
3	.0008	-.0195
4	.0313	-.0511

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	815.26907	815.26907		
REG(WATER/DISTILLED)	6	1.68890	.28148	1.30	.2573
ERROR	264	57.15169	.21648		
TOTAL	271	874.10966			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0846	(-.7015 , .5323)	.0019	(-.1277 , .1314)
3	.0008	(-.6376 , .6393)	-.0195	(-.1518 , .1128)
4	.0313	(-.5865 , .6490)	-.0511	(-.1799 , .0777)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-16

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON HEXACHLOROBENZENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .97792

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0015	-.0035
3	.1249	-.0365
4	-.2115	-.0021

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	807.37324	807.37324		
REG(WATER/DISTILLED)	6	2.11617	.35270	2.49	.0233
ERROR	252	35.68681	.14161		
TOTAL	259	845.17622			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0015	(-.4359 , .4330)	-.0035	(-.0974 , .0904)
3	.1249	(-.3034 , .5532)	-.0365	(-.1288 , .0559)
4	-.2115	(-.6563 , .2332)	-.0021	(-.0979 , .0936)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-17

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON ISOPHORONE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .98036

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0252	-.0167
3	-.2478	.0366
4	.6282	-.1419

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	737.28684	737.28684		
REG(WATER/DISTILLED)	6	4.21668	.70278	1.84	.0915
ERROR	229	87.25895	.38104		
TOTAL	236	828.76247			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	.0252	(-.7429 , .7934)	-.0167	(-.1756 , .1423)
3	-.2478	(-1.0345 , .5390)	.0366	(-.1280 , .2012)
4	.6282	(-.1448 , 1.4011)	-.1419	(-.3054 , .0217)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-18

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON NAPHTHALENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .93327

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0802	-.0079
3	.0459	.0023
4	.0329	-.0273

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	935.95099	935.95099		
REG(WATER/DISTILLED)	6	1.10286	.18381	1.99	.0674
ERROR	284	26.26194	.09247		
TOTAL	291	963.31579			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.0802	(-.2524 , .4128)	-.0079	(-.0775 , .0617)
3	.0459	(-.2900 , .3818)	.0023	(-.0678 , .0723)
4	.0329	(-.2936 , .3593)	-.0273	(-.0958 , .0413)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-19

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON PCB-1260 ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.12678

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-2.0474	.2860
3	-1.7625	.1520
4	-2.0985	.2447

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	430.17516	430.17516		
REG(WATER/DISTILLED)	6	33.14161	5.52360	8.78	.0000
ERROR	186	116.97304	.62889		
TOTAL	193	580.28981			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-2.0474	(-3.7469 , -.3479)	.2860	(-.0436 , .6156)
3	-1.7625	(-3.5932 , .0682)	.1520	(-.1955 , .4996)
4	-2.0985	(-3.9637 , -.2334)	.2447	(-.1067 , .5961)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-20

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON 1,3-DICHLOROBENZENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.05436

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0773	-.0038
3	.0991	-.0035
4	.0718	-.0485

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	1134.13125	1134.13125		
REG(WATER/DISTILLED)	6	2.43178	.40530	1.63	.1401
ERROR	277	69.08159	.24939		
TOTAL	284	1205.64462			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.0773	(-.4605 , .6150)	-.0038	(-.1182 , .1106)
3	.0991	(-.4614 , .6596)	-.0035	(-.1216 , .1146)
4	.0718	(-.4608 , .6045)	-.0485	(-.1638 , .0668)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-21

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON 2,6-DINITROTOLUENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.09799

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.1288	-.0322
3	-.1153	.0107
4	.1889	-.0480

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	899.87251	899.87251		
REG(WATER/DISTILLED)	6	.65031	.10839	1.05	.3951
ERROR	286	29.61141	.10354		
TOTAL	293	930.13424			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.1288	(-.2965 , .5541)	-.0322	(-.1209 , .0565)
3	-.1153	(-.5229 , .2923)	.0107	(-.0748 , .0962)
4	.1889	(-.2351 , .6129)	-.0480	(-.1363 , .0403)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-22

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON 3,3 -DICHLOROBENZIDINE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.07275

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.4460	.0706
3	-.3779	.0539
4	-.4418	.1063

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	496.62674	496.62674		
REG(WATER/DISTILLED)	6	2.09953	.34992	.85	.5291
ERROR	262	107.30362	.40956		
TOTAL	269	606.02989			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.4460	(-1.6293 , .7373)	.0706	(-.1648 , .3061)
3	-.3779	(-1.5873 , .8315)	.0539	(-.1852 , .2931)
4	-.4418	(-1.6526 , .7691)	.1063	(-.1347 , .3473)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-23

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON 4-CHLOROPHENYL PHENYL ETHER ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .98506

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0270	.0003
3	.1431	-.0124
4	-.1017	-.0056

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	627.62172	627.62172		
REG(WATER/DISTILLED)	6	1.57605	.26268	4.31	.0004
ERROR	242	14.76486	.06101		
TOTAL	249	643.96263			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.0270	(-.3004 , .3544)	.0003	(-.0710 , .0716)
3	.1431	(-.1855 , .4716)	-.0124	(-.0842 , .0593)
4	-.1017	(-.4353 , .2319)	-.0056	(-.0775 , .0663)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-24

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON 4,4 -DDD ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.05164

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0227	.0069
3	.1096	-.0599
4	-.0124	-.0346

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	636.39813	636.39813		
REG(WATER/DISTILLED)	6	1.77134	.29522	1.05	.3965
ERROR	228	64.37042	.28233		
TOTAL	235	702.53989			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0227	(-.7305 , .6851)	.0069	(-.1538 , .1676)
3	.1096	(-.6125 , .8318)	-.0599	(-.2216 , .1019)
4	-.0124	(-.7567 , .7320)	-.0346	(-.2002 , .1309)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-25

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

EFFECT OF WATER TYPE ON 4,4 -DDE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .99666

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.3237	.0273
3	-.4282	.0160
4	-.6313	.0333

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	714.96689	714.96689		
REG(WATER/DISTILLED)	6	8.02488	1.33748	8.22	.0000
ERROR	257	41.83112	.16277		
TOTAL	264	764.82289			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.3237	(-.8829 , .2355)	.0273	(-.0857 , .1403)
3	-.4282	(-.9993 , .1430)	.0160	(-.0994 , .1315)
4	-.6313	(-1.2053 , -.0572)	.0333	(-.0812 , .1478)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-26

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON BENZO(G,H,I)PERYLENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.06011

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-1.1113	.1646
3	-1.6292	.2065
4	-1.3354	.1426

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	604.67182	604.67182		
REG(WATER/DISTILLED)	6	27.10179	4.51697	11.56	.0000
ERROR	238	93.01311	.39081		
TOTAL	245	724.78672			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-1.1113	(-2.0979 , -.1247)	.1646	(-.0582 , .3873)
3	-1.6292	(-2.5906 , -.6678)	.2065	(-.0081 , .4212)
4	-1.3354	(-2.2798 , -.3910)	.1426	(-.0696 , .3549)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-27

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON BENZO(K)FLUORANTHENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.10278

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.1170	-.0111
3	-.2850	-.0186
4	-.1811	-.0741

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	974.96677	974.96677		
REG(WATER/DISTILLED)	6	11.58140	1.93023	4.71	.0001
ERROR	275	112.76034	.41004		
TOTAL	282	1099.30850			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.1170	(-.8823 , .6483)	-.0111	(-.1790 , .1569)
3	-.2850	(-1.0170 , .4469)	-.0186	(-.1793 , .1420)
4	-.1811	(-.9032 , .5411)	-.0741	(-.2321 , .0838)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-28

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON BENZYL BUTYL PHTHALATE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.19094

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.2664	-.0458
3	.3451	-.0792
4	.8495	-.1576

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	1072.53828	1072.53828		
REG(WATER/DISTILLED)	6	4.58377	.76396	1.82	.0946
ERROR	273	114.39850	.41904		
TOTAL	280	1191.52056			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.2664	(-.4686 , 1.0013)	-.0458	(-.2078 , .1162)
3	.3451	(-.4116 , 1.1018)	-.0792	(-.2445 , .0861)
4	.8495	(.1187 , 1.5803)	-.1576	(-.3198 , .0047)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-29

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON BIS(2-CHLOROETHOXY)METHANE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.15308

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.2942	.0461
3	.2787	-.0776
4	.7238	-.1406

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	944.44488	944.44488		
REG(WATER/DISTILLED)	6	5.48489	.91415	3.17	.0050
ERROR	280	80.63600	.28799		
TOTAL	287	1030.56577			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.2942	(-.9702 , .3818)	.0461	(-.0950 , .1871)
3	.2787	(-.4247 , .9821)	-.0776	(-.2228 , .0676)
4	.7238	(.0459 , 1.4018)	-.1406	(-.2823 , .0011)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-30

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON BIS(2-CHLOROISOPROPYL)ETHER ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.04333

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.2299	.0278
3	.2108	-.0730
4	.1441	-.0341

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	625.19153	625.19153		
REG(WATER/DISTILLED)	6	1.65829	.27638	1.97	.0706
ERROR	267	37.51615	.14051		
TOTAL	274	664.36597			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.2299	(-.7658 , .3061)	.0278	(-.0858 , .1415)
3	.2108	(-.3228 , .7444)	-.0730	(-.1863 , .0402)
4	.1441	(-.4015 , .6897)	-.0341	(-.1492 , .0810)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-31

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON BIS(2-ETHYLHEXYL)PHTHALATE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.09581

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-1.3019	.1673
3	-1.4514	.1482
4	-.9349	.0563

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	1147.58681	1147.58681		
REG(WATER/DISTILLED)	6	33.56571	5.59428	10.72	.0000
ERROR	271	141.46024	.52199		
TOTAL	278	1322.61275			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	-1.3019	(-2.1140 , -.4898)	.1673	(-.0097 , .3443)
3	-1.4514	(-2.3787 , -.5242)	.1482	(-.0474 , .3439)
4	-.9349	(-1.7562 , -.1136)	.0563	(-.1227 , .2353)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-32

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON CHRYSENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.05061

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.2001	.0141
3	.0330	-.0770
4	-.0655	-.0787

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	889.53863	889.53863		
REG(WATER/DISTILLED)	6	6.90723	1.15121	5.06	.0001
ERROR	269	61.20934	.22754		
TOTAL	276	957.65521			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.2001	(-.6981 , .2980)	.0141	(-.1049 , .1330)
3	.0330	(-.4875 , .5536)	-.0770	(-.1986 , .0446)
4	-.0655	(-.5752 , .4442)	-.0787	(-.1986 , .0412)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-33

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - D/N 223 **

EFFECT OF WATER TYPE ON DI-n-OCTYLPHTHALATE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE(GAMMA(1)) = 1.11232

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-1.2142	.1360
3	-1.0317	.0872
4	-1.1576	.0967

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	1242.86841	1242.86841		
REG(WATER/DISTILLED)	6	30.10475	5.01746	8.97	.0000
ERROR	283	158.24779	.55918		
TOTAL	290	1431.22095			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	-1.2142	(-2.0626 , -.3658)	.1360	(-.0501 , .3221)
3	-1.0317	(-1.9209 , -.1426)	.0872	(-.1042 , .2787)
4	-1.1576	(-1.9810 , -.3343)	.0967	(-.0844 , .2778)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-34

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON DIELDRIN ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .99374

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0615	-.0333
3	.1871	-.0718
4	.1352	-.0686

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	764.01095	764.01095		
REG(WATER/DISTILLED)	6	1.56607	.26101	2.71	.0143
ERROR	263	25.31850	.09627		
TOTAL	270	790.89552			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.0615	(-.3038 , .4269)	-.0333	(-.1135 , .0468)
3	.1871	(-.1664 , .5407)	-.0718	(-.1493 , .0058)
4	.1352	(-.2269 , .4972)	-.0686	(-.1480 , .0108)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-35

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON DIMETHYL PHTHALATE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .81299

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0659	.0584
3	.0579	-.0070
4	.0227	.1106

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	402.97610	402.97610		
REG(WATER/DISTILLED)	6	8.26568	1.37761	1.28	.2684
ERROR	211	227.35742	1.07752		
TOTAL	218	638.59920			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0659	(-1.5011 , 1.3692)	.0584	(-.2571 , .3739)
3	.0579	(-1.4604 , 1.5761)	-.0070	(-.3342 , .3202)
4	.0227	(-1.4833 , 1.5287)	.1106	(-.2243 , .4455)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-36

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON ENDRIN ALDEHYDE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.04491

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.6454	.0641
3	.2683	-.0799
4	-.3104	-.0092

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	454.94500	454.94500		
REG(WATER/DISTILLED)	6	6.36768	1.06128	3.63	.0019
ERROR	222	64.87507	.29223		
TOTAL	229	526.18775			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.6454	(-1.5996 , .3087)	.0641	(-.1255 , .2536)
3	.2683	(-.7234 , 1.2601)	-.0799	(-.2760 , .1162)
4	-.3104	(-1.3106 , .6898)	-.0092	(-.2050 , .1866)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-37

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON FLUORENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.00387

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0008	-.0151
3	.0094	-.0352
4	.0919	-.0647

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	822.02529	822.02529		
REG(WATER/DISTILLED)	6	1.54722	.25787	2.98	.0079
ERROR	266	23.05125	.08666		
TOTAL	273	846.62376			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0008	(-.3264 , .3249)	-.0151	(-.0918 , .0615)
3	.0094	(-.3020 , .3208)	-.0352	(-.1081 , .0377)
4	.0919	(-.2233 , .4070)	-.0647	(-.1383 , .0088)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-38

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON HEPTACHLOR EPOXIDE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.08556

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0260	-.0197
3	.3849	-.0959
4	-.1460	-.0407

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	1005.29528	1005.29528		
REG(WATER/DISTILLED)	6	5.66734	.94456	3.98	.0008
ERROR	288	68.29348	.23713		
TOTAL	295	1079.25610			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	.0260	(-.5095 , .5614)	-.0197	(-.1382 , .0987)
3	.3849	(-.1467 , .9164)	-.0959	(-.2132 , .0214)
4	-.1460	(-.7007 , .4088)	-.0407	(-.1631 , .0817)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-39

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON HEXACHLORODUTADIENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.05021

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0011	-.0160
3	.1215	-.0405
4	.1438	-.0621

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	1004.31569	1004.31569		
REG(WATER/DISTILLED)	6	1.16531	.19422	1.83	.0927
ERROR	301	31.92103	.10605		
TOTAL	308	1037.40204			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0011	(-.3631 , .3608)	-.0160	(-.0930 , .0610)
3	.1215	(-.2411 , .4842)	-.0405	(-.1178 , .0369)
4	.1438	(-.2256 , .5132)	-.0621	(-.1406 , .0165)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-40

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON HEXACHLOROETHANE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.05532

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.1787	-.0351
3	.0102	-.0011
4	.1231	-.0234

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	951.89622	951.89622		
REG(WATER/DISTILLED)	6	.26751	.04458	.46	.8354
ERROR	280	26.95732	.09628		
TOTAL	287	979.12104			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	.1787	(-.1658 , .5232)	-.0351	(-.1128 , .0426)
3	.0102	(-.3322 , .3526)	-.0011	(-.0791 , .0769)
4	.1231	(-.2191 , .4653)	-.0234	(-.1022 , .0553)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-41

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON INDENO(1,2,3-C,D)PYRENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.24540

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-1.1826	.1897
3	-.9625	.0726
4	-.6214	.0383

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	707.65589	707.65589		
REG(WATER/DISTILLED)	6	16.50916	2.75153	4.80	.0001
ERROR	227	130.02257	.57279		
TOTAL	234	854.18762			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-1.1826	(-2.3732 , .0081)	.1897	(-.0784 , .4578)
3	-.9625	(-2.1519 , .2269)	.0726	(-.1935 , .3388)
4	-.6214	(-1.7954 , .5525)	.0383	(-.2260 , .3025)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-42

MONITORING AND SUPPORT LABORATORY
OF RESEARCH AND DEVELOPMENT
RONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON N-NITROSODI-N-PROPYLAMINE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.10369

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.4319	.0726
3	.3319	-.0772
4	.3414	-.0938

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	492.64832	492.64832		
REG(WATER/DISTILLED)	6	2.43208	.40535	1.09	.3685
ERROR	254	94.41258	.37170		
TOTAL	261	589.49299			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.4319	(-1.5278 , .6639)	.0726	(-.1456 , .2907)
3	.3319	(-.7508 , 1.4146)	-.0772	(-.2935 , .1390)
4	.3414	(-.7724 , 1.4552)	-.0938	(-.3147 , .1271)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-43

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON NITROBENZENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.07930

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.2899	.0414
3	.1389	-.0389
4	.1182	-.0301

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	923.22708	923.22708		
REG(WATER/DISTILLED)	6	1.15021	.19170	1.38	.2219
ERROR	265	36.75280	.13869		
TOTAL	272	961.13009			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.2899	(-.7556 , .1758)	.0414	(-.0545 , .1376)
3	.1389	(-.3204 , .5981)	-.0389	(-.1337 , .0558)
4	.1182	(-.3589 , .5954)	-.0301	(-.1279 , .0678)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-44

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON PHENANTHRENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .99179

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.1022	-.0265
3	.2869	-.0751
4	.2224	-.0539

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	775.71519	775.71519		
REG(WATER/DISTILLED)	6	.74622	.12437	2.09	.0547
ERROR	257	15.28647	.05948		
TOTAL	264	791.74788			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.1022	(-.1913 , .3957)	-.0265	(-.0886 , .0356)
3	.2869	(-.0059 , .5797)	-.0751	(-.1372 , -.0130)
4	.2224	(-.0630 , .5077)	-.0539	(-.1143 , .0065)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-45

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON PYRENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.01113

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0050	-.0140
3	.0939	-.0381
4	.3177	-.1172

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	869.13597	869.13597		
REG(WATER/DISTILLED)	6	2.44025	.40671	4.64	.0002
ERROR	285	24.97966	.08765		
TOTAL	292	896.55588			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0050	(-.2999 , .2900)	-.0140	(-.0863 , .0583)
3	.0939	(-.2011 , .3888)	-.0381	(-.1104 , .0342)
4	.3177	(.0247 , .6108)	-.1172	(-.1887 , -.0456)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-46

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON 1,2-DICHLOROBENZENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .99121

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0852	-.0149
3	.0409	-.0184
4	.1348	-.0541

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	845.07280	845.07280		
REG(WATER/DISTILLED)	6	.81679	.13613	1.28	.2645
ERROR	284	30.11164	.10603		
TOTAL	291	876.00123			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	.0852	(-.2656 , .4359)	-.0149	(-.0973 , .0675)
3	.0409	(-.3030 , .3849)	-.0184	(-.0983 , .0616)
4	.1348	(-.2070 , .4767)	-.0541	(-.1334 , .0252)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-47

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 612 VALIDATION STUDY - BFA 123 **

EFFECT OF WATER TYPE ON 1,2,4-TRICHLOROBENZENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE(GAMMA11) = 1.00705

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0096	-.0162
3	-.0456	-.0138
6	-.0154	-.0109

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	796.01967	796.01967		
REG(WATER/DISTILLED)	6	.51604	.08601	1.26	.2770
ERROR	273	18.66187	.06836		
TOTAL	280	815.19757			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

	INTERCEPT(WATER-DISTILLED)		SLOPE(WATER-DISTILLED)	
WATER	ESTIMATE	INTERVAL	ESTIMATE	INTERVAL
2	-.0096	(-.3353 , .3160)	-.0162	(-.0858 , .0533)
3	-.0456	(-.3668 , .2755)	-.0138	(-.0826 , .0551)
6	-.0154	(-.3454 , .3146)	-.0109	(-.0733 , .0514)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-48

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N 273 **

EFFECT OF WATER TYPE ON 1,4-DICHLOROBENZENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:(WATER) = 1.05236

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0134	-.0012
3	.0495	-.0786
4	.1848	-.0432

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
DISTILLED	1	883.17698	883.17698		
DIS(WATER/DISTILLED)	6	.62284	.10347	.88	.5122
ERROR	296	34.93225	.11801		
TOTAL	303	918.73207			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL		SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL	
2	.0134	-.4025	.4293	-.0012	-.0881	.0858
3	.0495	-.3857	.4843	-.0286	-.1186	.0614
4	.1848	-.2692	.5923	-.0432	-.1288	.0424

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND RECOVERY REGRESSIONS PERFORMED EARLIER.

TABLE 9-)

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON 2-CHLORONAPHTHALENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE(GAMMA(1)) = 1.00451

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0381	.0025
3	.0176	-.0359
6	.9486	-.0566

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REGR(DISTILLED)	1	775.96820	775.96820		
REGR(WATER/DISTILLED)	6	.91598	.15266	2.00	.0665
ERROR	251	19.17506	.07639		
TOTAL	258	796.05926			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0381	(-.3361 , .2600)	.0025	(-.0733 , .0783)
3	.0176	(-.2744 , .3096)	-.0359	(-.1075 , .0358)
6	.9486	(.6562 , 1.2410)	-.0566	(-.1314 , .0181)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND RECOVERY REGRESSIONS PERFORMED EARLIER.

TABLE 9-50

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

EFFECT OF WATER TYPE ON 2,4-DINITROTOLUENE ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE(GAMMA(1)) = 1.16535

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.2429	-.0648
3	.2742	-.0739
6	.6451	-.1141

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	885.89076	885.89076		
REG(WATER/DISTILLED)	6	2.51059	.41843	1.68	.1261
ERROR	261	65.00252	.24905		
TOTAL	268	953.40387			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.2429	(-.4016 , .8874)	-.0648	(-.1989 , .0693)
3	.2742	(-.3678 , .9162)	-.0739	(-.2075 , .0598)
6	.6451	(-.0489 , 1.3392)	-.1141	(-.2596 , .0314)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-51

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - D/N (2) **

EFFECT OF WATER TYPE ON 4-BROMOPHENYL PHENYL ETHER ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.05204

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0345	-.0175
3	.0145	-.0196
4	.0415	-.0596

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	925.28566	925.28566		
REG(WATER/DISTILLED)	6	1.97259	.32877	2.90	.0094
ERROR	270	30.64461	.11350		
TOTAL	277	957.90287			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0345	(-.4169 , .3479)	-.0175	(-.1020 , .0669)
3	.0145	(-.3615 , .3904)	-.0196	(-.1036 , .0645)
4	.0415	(-.3397 , .4227)	-.0596	(-.1437 , .0244)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-52

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - D/W (2) **

EFFECT OF WATER TYPE ON 4,4 -DDT ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.19152

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.2582	.0283
3	-.5779	.0506
4	-.6515	.0085

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
MEAN(DISTILLED)	1	947.97374	947.97374		
MEAN(WATER/DISTILLED)	6	6.59884	1.09981	2.45	.0262
ERROR	216	97.15273	.44978		
TOTAL	223	1051.72531			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL		SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL	
2	-.2582	(-1.1481 ,	.6318)	.0283	(-.1621 ,	.2188)
3	-.5779	(-1.4527 ,	.2969)	.0506	(-.1359 ,	.2371)
4	-.6515	(-1.3495 ,	.4465)	.0085	(-.1861 ,	.2031)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-53

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON PENTACHLOROPHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE(GAMMA(1)) = .99894

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0750	-.0554
3	.0124	-.0179
4	-.1218	-.0297

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
MEAN(DISTILLED)	1	559.49090	559.49090		
MEAN(WATER/DISTILLED)	6	2.80277	.46713	2.03	.0625
ERROR	275	63.42749	.23065		
TOTAL	282	625.72115			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	.0750	(-.5996 , .7497)	-.0554	(-.2004 , .0895)
3	.0124	(-.6873 , .7121)	-.0179	(-.1692 , .1334)
4	-.1218	(-.8223 , .5787)	-.0297	(-.1803 , .1208)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-54

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON PHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .91620

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.2262	.0440
3	.0045	.0115
4	.1147	-.0120

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	756.62235	756.62235		
REG(WATER/DISTILLED)	6	.95112	.15852	.98	.4366
ERROR	280	45.14309	.16123		
TOTAL	287	802.71656			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL		SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL	
2	-.2262	(-.6651 ,	.2128)	.0440	(-.0547 ,	.1426)
3	.0045	(-.4450 ,	.4540)	.0115	(-.0893 ,	.1123)
4	.1147	(-.3290 ,	.5584)	-.0120	(-.1116 ,	.0876)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-55

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON 2-CHLOROPHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .97717

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.1031	.0169
3	-.0283	.0044
4	-.0141	-.0045

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	834.15797	834.15797		
REG(WATER/DISTILLED)	6	.11733	.01956	.17	.9853
ERROR	279	32.61368	.11689		
TOTAL	286	866.88897			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.1031	(-.4841 , .2780)	.0169	(-.0664 , .1002)
3	-.0283	(-.4249 , .3683)	.0044	(-.0818 , .0906)
4	-.0141	(-.4056 , .3773)	-.0045	(-.0900 , .0809)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-56

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON 2-METHYL-4,6-DINITROPHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.24720

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0518	-.0109
3	.8121	-.1212
4	1.0493	-.1773

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	461.08816	461.08816		
REG(WATER/DISTILLED)	6	3.00117	.50019	2.16	.0476
ERROR	265	61.46240	.23193		
TOTAL	272	525.55173			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	.0518	(-1.0156 , 1.1192)	-.0109	(-.2044 , .1826)
3	.8121	(-.2632 , 1.8875)	-.1212	(-.3148 , .0725)
4	1.0493	(-.0344 , 2.1330)	-.1773	(-.3720 , .0174)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-57

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON 2-NITROPHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.03187

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0173	-.0159
3	-.0041	-.0093
4	.0000	-.0249

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	695.57316	695.57316		
REG(WATER/DISTILLED)	6	.54561	.09093	.74	.6153
ERROR	308	37.69266	.12238		
TOTAL	315	733.81142			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.0173	(-.4429 , .4776)	-.0159	(-.1160 , .0841)
3	-.0041	(-.4771 , .4689)	-.0093	(-.1115 , .0929)
4	.0000	(-.4654 , .4654)	-.0249	(-.1253 , .0755)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-58

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON 2,4-DICHLOROPHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .98955

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0395	-.0055
3	-.0643	.0141
4	-.0158	-.0122

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	888.87310	888.87310		
REG(WATER/DISTILLED)	6	.32590	.05432	.59	.7389
ERROR	289	26.63953	.09218		
TOTAL	296	915.83854			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0395	(-.3831 , .3040)	-.0055	(-.0791 , .0682)
3	-.0643	(-.4326 , .2641)	.0141	(-.0607 , .0889)
4	-.0158	(-.3602 , .3286)	-.0122	(-.0862 , .0619)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-59

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON 2,4-DIMETHYLPHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .85966

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-1.1235	.1807
3	-.4443	.0405
4	-.8374	.0668

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	632.19599	632.19599		
REG(WATER/DISTILLED)	6	11.30676	1.88446	4.85	.0001
ERROR	229	88.96408	.38849		
TOTAL	236	732.46683			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-1.1235	(-1.9499 , -.2972)	.1807	(.0098 , .3515)
3	-.4443	(-1.2621 , .3735)	.0405	(-.1304 , .2114)
4	-.8374	(-1.6730 , -.0019)	.0668	(-.1068 , .2405)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-60

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON 2,4-DINITROPHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.60241

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.8894	-.1321
5	1.3994	-.2075
6	2.1496	-.3264

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	617.73452	617.73452		
REG(WATER/DISTILLED)	6	7.65921	1.27654	2.39	.0289
ERROR	241	128.49141	.53316		
TOTAL	248	753.88514			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.8894	(-.8885 , 2.6672)	-.1321	(-.4367 , .1726)
5	1.3994	(-.3832 , 3.1820)	-.2075	(-.5138 , .0988)
6	2.1496	(.4049 , 3.8942)	-.3264	(-.6274 , -.0255)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-61

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON 2,4,6-TRICHLOROPHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = .99665

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	.0996	-.0211
3	-.2030	.0283
4	.0243	-.0226

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	614.42339	614.42339		
REG(WATER/DISTILLED)	6	.78680	.13113	1.19	.3132
ERROR	283	31.26626	.11048		
TOTAL	290	646.47645			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	.0996	(-.3441 , .5434)	-.0211	(-.1208 , .0786)
3	-.2030	(-.6454 , .2394)	.0283	(-.0710 , .1276)
4	.0243	(-.4192 , .4678)	-.0226	(-.1219 , .0768)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-62

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON 4-CHLORO-3-METHYLPHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.00583

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.1163	.0057
3	-.0486	.0040
4	.0075	-.0172

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	912.62979	912.62979		
REG(WATER/DISTILLED)	6	.45010	.07502	.49	.8125
ERROR	287	43.56545	.15180		
TOTAL	294	956.64533			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERCEPT(WATER-DISTILLED) INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	SLOPE(WATER-DISTILLED) INTERVAL
2	-.1163	(-.5677 , .3351)	.0057	(-.0898 , .1011)
3	-.0486	(-.4906 , .3934)	.0040	(-.0894 , .0974)
4	.0075	(-.4448 , .4598)	-.0172	(-.1127 , .0782)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

TABLE 9-63

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

EFFECT OF WATER TYPE ON 4-NITROPHENOL ANALYSIS

** POINT ESTIMATES **

DISTILLED WATER SLOPE:GAMMA(1) = 1.06594

WATER	INTERCEPT(WATER-DISTILLED)	SLOPE(WATER-DISTILLED)
2	-.0380	.0064
3	.2117	-.0336
4	.5913	-.1099

** ANALYSIS OF VARIANCE **

SOURCE	DF	SUM OF SQUARES	MEAN SQUARE	F	PROB
REG(DISTILLED)	1	536.81263	536.81263		
REG(WATER/DISTILLED)	6	1.19373	.19895	.83	.5470
ERROR	246	58.91143	.23948		
TOTAL	253	596.91779			

** TABLE OF 95% CONFIDENCE INTERVALS FOR THE DIFFERENCES BETWEEN INTERCEPTS AND THE DIFFERENCES BETWEEN SLOPES **

WATER	INTERCEPT(WATER-DISTILLED) ESTIMATE	INTERVAL	SLOPE(WATER-DISTILLED) ESTIMATE	INTERVAL
2	-.0380	(-.8636 , .7876)	.0064	(-.1517 , .1645)
3	.2117	(-.5924 , 1.0157)	-.0336	(-.1893 , .1220)
4	.5913	(-.2278 , 1.4105)	-.1099	(-.2682 , .0484)

NOTE: IF ZERO IS CONTAINED WITHIN A GIVEN CONFIDENCE INTERVAL THEN THERE IS NO STATISTICAL SIGNIFICANCE BETWEEN DISTILLED WATER AND THE CORRESPONDING WASTE WATER FOR THE ASSOCIATED PARAMETER(INTERCEPT/SLOPE).

THE SLOPE AND INTERCEPT ESTIMATES FROM THIS ANALYSIS ARE NOT THE SAME AS THOSE OBTAINED FROM THE PRECISION AND ACCURACY REGRESSIONS PERFORMED EARLIER.

SECTION 6

RESULTS AND DISCUSSION

The objective of this study was to characterize the performance of Method 625 in terms of accuracy, overall precision, single-analyst precision, and the effect of water type on accuracy and precision for each of the B/N and acid compounds. Accuracy and precision estimates, expressed as regression equations, were presented in Table 1 of Section 2 for each compound. Table 10 was prepared to facilitate the interpretation of these equations. In Table 10, accuracy (percent recovery), overall precision (percent standard deviation, % RSD), and single-analyst precision (percent standard deviation for a single analyst, % RSD-SA) were computed using the regression equations in Table 1. Estimates of accuracy and precision were computed for low and high prepared concentrations of 10, 15, 25, 40 or 100 and 100 or 500 µg/L, respectively. These concentrations are approximately equal to the lowest and highest spike levels used in the study. Values of the mean recovery, X, computed as less than zero were set to 1 µg/L to compute the precision estimates. Accuracy and precision estimates computed as less than zero were set to zero.

One measure of the performance of the method is that 20% of the 22,555 data points were rejected as outliers, which is equivalent to rejecting data from 3 of the 15 laboratories. The discussion which follows is based on the data set after removing these 4,557 values.

TABLE 10-1. ACCURACY AND PRECISION ESTIMATES FOR LOW- AND HIGH-LEVEL PREPARED CONCENTRATIONS - B/N COMPOUNDS

COMPOUND	CONC. (UG/L)	DISTILLED WATER			TAP WATER			SURFACE WATER			IND. EFFLUENT		
		%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA
ACENAPHTHENE	10	98	14	14	96	18	15	91	27	14	90	22	14
	100	96	20	15	95	17	10	91	27	20	85	18	15
ACENAPHTHYLENE	10	96	20	13	92	20	20	99	28	14	88	20	9
	100	90	25	23	87	23	16	97	22	14	88	24	13
ALDRIN	10	95	55	41	75	35	22	65	36	11	60	60	41
	100	80	44	29	67	46	27	56	50	33	53	59	38
ANTHRACENE	10	87	20	17	86	18	13	86	23	18	83	31	17
	100	81	26	21	82	19	15	82	24	18	75	29	17
B-BHC	15	81	14	15	78	15	15	77	20	9	78	23	16
	100	86	28	19	81	21	16	80	23	14	83	25	17
BENZO(A)ANTHRACENE	25	86	25	19	85	38	42	70	32	24	60	50	31
	100	87	26	16	81	29	25	71	35	30	62	52	40
BENZO(A)PYRENE	10	89	47	27	70	45	38	68	56	50	53	67	39
	100	90	34	23	78	40	33	68	46	40	56	65	41
BENZO(B)FLUORANTHENE	10	75	42	28	53	65	68	52	58	27	51	60	33
	100	91	30	22	68	47	35	65	43	34	56	62	40
BIS(2-CHLOROETHYL)ETHER	15	76	36	26	70	44	39	82	37	17	86	39	45
	100	84	35	34	84	29	27	88	33	25	90	35	24
DI-N-BUTYLPHTHALATE	10	66	48	31	63	32	27	78	45	18	62	44	28
	100	60	40	15	59	34	24	62	35	26	58	47	24
DIBENZO(A,H)ANTHRACENE	10	135	61	93	38	48	42	50	53	37	38	73	25
	100	93	59	39	80	55	38	63	50	37	60	85	44
DIETHYL PHTHALATE	10	53	56	55	47	61	36	64	57	52	55	49	32
	100	44	52	31	43	65	34	52	51	41	57	45	33

TABLE 10-1. (Continued)

COMPOUND	CONC. (UG/L)	DISTILLED WATER %REC	DISTILLED WATER %RSD	DISTILLED WATER %RSD -SA	TAP WATER %REC	TAP WATER %RSD	TAP WATER %RSD -SA	SURFACE WATER %REC	SURFACE WATER %RSD	SURFACE WATER %RSD -SA	IND. EFFLUENT %REC	IND. EFFLUENT %RSD	IND. EFFLUENT %RSD -SA
ENDOSULFAN SULFATE	15	42	47	51	36	55	44	50	33	11	34	63	35
	100	39	60	18	63	65	22	61	63	21	60	69	40
FLUORANTHENE	10	92	21	14	84	23	23	82	21	15	83	38	28
	100	82	27	21	77	22	13	72	28	22	70	36	20
HEPTACHLOR	10	57	46	14	50	41	23	52	27	5	54	51	21
	100	84	50	23	71	44	36	71	48	36	67	49	38
HEXACHLOROBENZENE	10	81	37	17	74	33	27	75	29	16	60	29	19
	100	75	42	18	72	30	25	70	32	22	58	37	17
ISOPHORONE	10	126	35	33	131	49	28	111	43	32	194	60	25
	100	113	33	28	112	52	30	106	36	21	109	58	39
NAPHTHALENE	10	92	23	17	90	20	14	92	26	15	88	27	18
	100	78	29	20	78	24	18	79	27	23	72	32	20
PCB-1260	40	54	51	52	25	95	24	21	52	19	15	49	78
	100	70	46	40	51	60	45	39	62	60	33	56	49
1,3-DICHLOROBENZENE	10	79	42	34	78	42	36	84	32	34	76	51	39
	100	85	41	26	88	42	25	91	34	32	79	42	34
2,6-DINITROTOLUENE	10	70	24	32	74	21	21	71	58	31	87	37	8
	100	102	19	15	99	21	18	102	28	21	103	32	25
3,3'-DICHLOROBENZIDINE	40	91	56	48	80	61	37	70	37	25	82	44	46
	100	110	50	35	98	50	27	101	61	54	113	43	30
4-CHLOROPHENYL PHENYL ETHER	10	96	25	10	95	22	12	103	18	11	85	19	17
	100	92	29	19	95	25	15	98	24	15	81	33	19

TABLE 10-1. (Continued)

COMPOUND	CONC. (UG/L)	DISTILLED WATER %REC	DISTILLED WATER %RSD	DISTILLED WATER %RSD -SA	TAP WATER %REC	TAP WATER %RSD	TAP WATER %RSD -SA	SURFACE WATER %REC	SURFACE WATER %RSD	SURFACE WATER %RSD -SA	IND. EFFLUENT %REC	IND. EFFLUENT %RSD	IND. EFFLUENT %RSD -SA
4,4'-DDD	10	52	48	23	52	49	43	52	42	17	42	39	32
	100	56	64	28	54	54	32	49	65	42	46	56	44
4,4'-DDE	15	66	29	14	55	36	40	45	23	14	47	42	44
	100	69	38	24	57	38	36	47	37	20	47	48	40
BENZO(G,H,I)PERYLENE	10	89	46	56	52	38	23	35	49	58	43	65	35
	100	97	51	31	68	53	42	62	63	48	58	68	35
BENZO(K)FLUORANTHENE	10	71	41	33	59	43	17	59	63	51	60	68	42
	100	85	35	20	64	37	20	63	56	40	55	64	29
BENZYL BUTYL PHTHALATE	10	49	72	37	58	75	54	46	67	44	64	69	45
	100	64	54	19	61	54	21	51	62	50	62	58	50
BIS(2-CHLOROETHOXY)METHANE	10	62	59	38	59	72	63	65	53	27	102	47	49
	100	107	28	17	100	29	18	92	34	32	101	32	26
BIS(2-CHLOROISOPROPYL)ETHER	15	88	33	26	80	34	25	91	39	21	96	22	18
	100	101	26	24	91	29	16	86	31	31	95	21	13
BIS(2-ETHYLHEXYL)PHTHALATE	10	72	45	36	40	59	40	33	44	25	43	67	48
	100	83	37	27	61	49	28	49	49	38	51	64	33
CHRYSENE	10	83	32	30	75	33	28	64	41	33	69	54	37
	100	92	33	28	79	26	18	62	44	35	66	52	33
D-BHC	10	18	84	82	28	86	47	24	62	0	44	70	53
	100	28	92	37	34	91	22	32	88	54	42	77	34
DI-N-OCTYLPHTHALATE	10	68	54	38	32	56	42	34	49	28	36	77	50
	100	75	39	23	53	53	27	49	56	44	48	75	33

TABLE 10-1. (Continued)

COMPOUND	CONC. (UG/L)	DISTILLED WATER %REC	DISTILLED WATER %RSD	DISTILLED WATER %RSD -SA	TAP WATER %REC	TAP WATER %RSD	TAP WATER %RSD -SA	SURFACE WATER %REC	SURFACE WATER %RSD	SURFACE WATER %RSD -SA	IND. EFFLUENT %REC	IND. EFFLUENT %RSD	IND. EFFLUENT %RSD -SA
DIELDRIN	10	80	25	18	76	18	14	77	20	15	80	30	24
	100	82	26	20	71	28	19	70	31	25	68	33	26
DIMETHYL PHTHALATE	10	30	75	60	29	92	30	34	81	46	29	75	58
	100	21	101	55	30	100	27	30	104	72	34	88	69
ENDRIN ALDEHYDE	25	61	69	44	43	68	38	63	58	28	51	81	23
	100	72	72	23	55	66	38	61	64	18	55	76	41
FLUORENE	10	90	20	15	86	20	16	81	25	17	85	36	28
	100	90	14	12	83	14	11	78	27	22	73	26	16
HEPTACHLOR EPOXIDE	10	73	37	27	70	34	24	78	33	23	59	43	45
	100	90	29	32	86	36	17	84	35	24	68	42	42
HEXACHLOROBUTADIENE	10	61	34	34	56	38	31	61	35	20	60	46	38
	100	70	27	20	62	18	17	62	22	19	59	30	24
HEXACHLOROETHANE	10	65	29	27	66	30	30	62	33	20	67	38	26
	100	72	18	18	68	22	22	68	27	28	69	24	21
INDENO(1,2,3-C,D)PYRENE	10	47	59	60	33	68	32	32	64	47	35	62	50
	100	75	51	31	55	51	26	47	57	53	52	60	37
N-NITROSODI-N-PROPYLAMINE	25	87	46	30	76	58	48	90	40	29	91	54	44
	100	106	44	28	101	47	33	100	52	40	89	49	38
NITROBENZENE	10	79	30	31	69	40	27	86	44	8	74	33	39
	100	106	27	20	98	29	15	96	35	32	98	34	20
PHENANTHRENE	10	86	18	19	85	13	9	89	15	13	92	28	22
	100	87	15	13	79	10	9	76	19	16	82	29	13

TABLE 10-1. (Continued)

COMPOUND	CONC. (UG/L)	DISTILLED WATER %REC	DISTILLED WATER %RSD	DISTILLED WATER %RSD -SA	TAP WATER %REC	TAP WATER %RSD	TAP WATER %RSD -SA	SURFACE WATER %REC	SURFACE WATER %RSD	SURFACE WATER %RSD -SA	IND. EFFLUENT %REC	IND. EFFLUENT %RSD	IND. EFFLUENT %RSD -SA
PYRENE	10	82	19	17	75	20	13	77	21	14	84	42	19
	100	84	15	16	76	14	10	73	18	16	71	37	17
1,2-DICHLOROBENZENE	10	83	29	26	83	36	29	87	42	24	85	38	24
	100	80	24	21	79	26	18	76	27	28	74	35	25
1,2,4-TRICHLOROBENZENE	10	86	26	25	80	31	17	82	39	22	81	30	26
	100	93	21	16	80	24	16	78	22	19	81	25	14
1,4-DICHLOROBENZENE	10	58	35	28	56	32	19	54	28	9	64	32	25
	100	72	30	24	73	32	18	67	31	28	69	30	22
2-CHLORONAPHTHALENE	10	89	17	13	85	20	14	83	29	27	88	22	18
	100	89	13	8	85	15	10	79	25	24	83	23	15
2,4-DINITROTOLUENE	10	44	55	36	57	63	34	54	50	30	87	39	37
	100	87	23	13	80	30	19	80	32	22	92	14	13
4-BROMOPHENYL PHENYL ETHER	10	78	25	22	73	29	18	77	30	19	70	30	28
	100	90	17	14	84	18	15	82	16	16	72	30	22
4,4'-DDT	10	46	52	46	39	54	35	35	64	27	32	58	37
	100	76	64	42	63	67	50	54	64	58	51	70	45

TABLE 10-2. ACCURACY AND PRECISION ESTIMATES FOR LOW- AND HIGH-LEVEL CONCENTRATIONS - ACID COMPOUNDS

COMPOUND	CONC. (UG/L)	DISTILLED WATER			TAP WATER			SURFACE WATER			IND. EFFLUENT		
		%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA
PENTACHLOROPHENOL	15	106	57	43	107	62	34	104	43	21	96	57	26
	100	95	35	27	86	42	37	88	32	19	76	32	19
PHENOL	10	56	45	39	55	55	51	58	39	31	58	34	24
	100	44	36	28	45	44	27	48	29	24	45	35	27
2-CHLOROPHENOL	10	81	40	36	77	36	33	74	22	19	78	27	10
	100	78	29	20	75	32	24	75	24	17	73	22	14
2-METHYL-4,6-DINITROPHENOL	100	71	46	36	71	52	39	87	47	21	87	45	16
	500	98	32	24	93	38	28	105	41	23	98	42	22
2-NITROPHENOL	15	99	44	29	92	41	33	92	42	19	95	45	20
	100	106	29	18	95	26	21	96	28	17	91	35	16
2,4-DICHLOROPHENOL	10	88	35	29	88	35	27	89	31	18	87	28	14
	100	87	22	16	83	25	20	89	23	14	82	24	17
2,4-DIMETHYLPHENOL	10	115	33	27	69	63	34	83	36	23	68	57	30
	100	75	24	18	59	41	25	64	40	29	51	59	29
2,4-DINITROPHENOL	100	54	91	42	50	74	45	71	68	30	70	68	34
	500	135	46	38	128	50	34	139	34	28	113	40	26
2,4,6-TRICHLOROPHENOL	15	90	35	32	96	32	33	86	35	19	91	33	31
	100	91	24	18	89	21	20	88	29	16	83	25	12
4-CHLORO-3-METHYLPHENOL	10	87	44	32	84	43	36	81	44	22	85	44	29
	100	84	31	24	78	29	20	81	30	18	77	29	16
4-NITROPHENOL	25	56	67	56	47	62	49	61	62	29	80	64	28
	100	60	49	42	54	48	33	59	48	30	59	48	38

ACCURACY

The accuracy of Method 625 is obtained by comparing the mean recovery, $\bar{X}$, to the prepared values of concentration in µg/L. In the statistical summary Tables 8-1 through 8-64, individual values of accuracy as percent relative error are listed for each analyte, in each water matrix, and at each of the six concentration levels in that water matrix (three Youden pairs). This results in 24 separate values for each compound for accuracy. The weighted linear regression of mean recovery, $\bar{X}$, versus the prepared concentration level, C, provides values representing the percent recovery over all of the concentration levels. This reduces the evaluation of accuracy to one statement for each of the 64 compounds in each of four waters as presented in Tables 1-1 through 1-17.

As seen in Table 10-1, the mean recovery (at 100 µg/L) for the B/N compounds ranges from 21% for dimethyl phthalate to 113% for isophorone with an average value of 74%. Both of these extremes were for the distilled water matrix. A mean recovery (at 100 µg/L) of 113% is also seen for 3,3'-dichlorobenzidine in the industrial effluent matrix. The mean recovery for low-level prepared concentrations ranges from 15% for PCB-1260 in the industrial effluent matrix to 194% for isophorone, also in the industrial effluent matrix, with an average value of 69%. The differences observed between percent recoveries at the low and high levels are directly related to the absolute magnitude of the intercept term in the regression equations. Some of the greatest percent recovery differences for the B/N compounds are seen for dibenzo(a,h)anthracene, endosulfan sulfate, isophorone, PCB-1260, 2,6-dinitrotoluene, 3,3'-dichlorobenzidine, bis(2-chloroethoxy)methane, nitrobenzine and 2,4-dinitrotoluene. Recoveries for dimethyl phthalate are extremely low, ranging from 21% to 34%, for all water matrices at both concentration levels.

The mean recovery (at 100 or 500 µg/L) for the acid compounds, as presented in Table 10-2, range from 44% for phenol in distilled water to 139% for 2,4-dinitrophenol in the surface water matrix with an average value of 82%. The mean recoveries for low-level prepared acid concentrations range from 47% for 4-nitrophenol in tap water to 115% for 2,4-dimethylphenol in distilled water, with an average value of 80%. Some of the greatest differences observed between percent recoveries at the low and high levels for the acid compounds are seen for pentachlorophenol, 2-methyl-4,6-dinitrophenol, 2,4-dimethylphenol, 2,4-dinitrophenol and 4-nitrophenol. Mean recoveries for phenol and 4-nitrophenol at the 100 µg/L concentration level are consistently low with recoveries ranging from 44% to 48% and 54% to 60%, respectively.

No clear trends of greater accuracy for higher- or lower-concentration Youden pairs are indicated. Compounds with relatively high recoveries did not have corresponding high blank values. The highest blank values in the distilled water were observed for di-n-butylphthalate (seven labs ≥ 1 µg/L) and bis(2-ethylhexyl)phthalate (8 labs ≥ 1 µg/L). However, recoveries for these compounds were below 80% for the low Youden pair.

PRECISION

The overall and single-analyst precisions of Method 625 were determined as % RSDs for each analyte, water type, and concentration level. The statistical summary Tables 8-1 through 8-64 present 24 individual values of overall percent relative standard deviation, and 12 individual values of % RSD-SA, for each compound. The weighted linear regression of standard deviation, S, versus mean recovery, $\bar{X}$, provides values of percent relative standard deviation over all of the concentration ranges. This

reduces the evaluation of precision to 256 statements - one for each of the 64 analytes in each of the four water types. These precision statements are presented in Tables 1-1 through 1-17 of Section 2.

The overall standard deviation of the analytical results indicate the dispersion expected among measurements generated from a group of laboratories. This represents the broad variation (reflecting the combined effect of systematic and random errors) in the data collected in the interlaboratory study. As seen in Table 10-1, the % RSD at 100 µg/L for the B/N compounds ranged from 10 percent for phenanthrene for the tap water matrix to 104% for dimethyl phthalate for the surface water matrix with a median value of 35%. The % RSD for low-level prepared concentrations ranged from 13% for phenanthrene to 95% for PCB-1260 with a median value of 39%. These extremes are for the tap water matrix. As seen for the percent recovery estimates, differences observed between precision estimates at low- and high-level prepared concentrations are directly related to the absolute magnitude of the intercept term in the regression equations. Some of the greatest differences between % RSD estimates at the two levels are seen for bis(2-chloroethoxy)methane and 2,4-dinitrotoluene. Precision for dimethyl phthalate is poor at both concentration levels for all water matrices with % RSDs ranging from 75% to 104%.

As seen in Table 10-2, the % RSDs at high-level concentrations for the acid compounds range from 21% for 2,4,6-trichlorophenol in the tap water matrix to 59% for 2,4-dimethylphenol in the industrial effluent with a median RSD of 32%. The % RSD for low-level prepared acid concentrations ranged from 22% for 2-chlorophenol in the surface water matrix to 91% for 2,4-dinitrophenol in distilled water with a median value of 44%.

Precision for 2,4-dinitrophenol is poor for all water matrices at the high-level concentration level with % RSDs ranging from 68% to 91%.

The single-analyst standard deviation indicates the precision associated within a single laboratory. As seen in Table 11-1, the % RSD-SA at a prepared concentration of 100 µg/L for the B/N compounds ranges from 8% for 2-chloronaphthalene in the distilled water matrix to 72% for dimethyl phthalate in the surface water matrix with a median value of 24%. The % RSD-SA for low-level prepared concentrations ranges from 0% for delta-BHC in the surface water matrix to 93% for dibenzo(a,h)anthracene in distilled water with a median % RSD-SA of 27%. The wide range of values for % RSD-SA is a result of the sign and magnitudes of the intercept term in the regression equations. Some of the greatest % RSD-SA differences at the low- and high-level concentrations are observed for dibenzo(a,h)anthracene, PCB-1260, 3,3'-dichlorobenzidine and bis(2-chloroethoxy)methane. With the exception of the tap water matrix, single-analyst precision for dimethyl phthalate was poor at both concentration levels with % RSD-SAs ranging from 46% to 72%.

The % RSD-SAs at high-level concentrations for the acid compounds, as presented in Table 10-2, range from 12% for 2,4,6-trichlorophenol in the industrial effluent to 42% for 4-nitrophenol in distilled water with a median value of 23%. The % RSD-SA for prepared acid concentrations at low levels range from 10% for 2-chlorophenol in the industrial effluent matrix to 56% for 4-nitrophenol in distilled water with a median % RSD-SA of 30%.

In general, precision values appear to be higher for lower-concentration Youden pairs, indicating relatively poorer

precision. This is the expected trend for precision in sample analysis.

EFFECTS OF WATER TYPES

The comparison of accuracy and precision across water types was presented in Table 9-1 through 9-63 and is summarized in Table 11. The observed F values are entered for each of the 63 B/N and acid analytes. The multiplicative model analysis was not performed for delta-BHC because of insufficient ampule data. The F-test suggests a possible effect due to water type in 28 of the 63 cases. Although statistical significance is indicated by the F-test, the null hypothesis test for 15 of the 28 compounds indicated that no significant effect due to water type has been established because zero is contained within the confidence intervals for both the differences between intercepts and the differences between slopes.

Practical significance was based on an examination of several factors in addition to the results of the statistical tests. These factors include the regression equations for accuracy and precision, the statistical summaries of the data, and the point estimates of accuracy and precision at two different levels of prepared concentration. A practical effect due to water is indicated from the analysis and examination of these factors for eight of the compounds. The slope and intercept estimates for dibenzo(a,h)anthracene in all three waters and 2,4-dimethylphenol in the tap water matrix are significantly different from the corresponding estimates for the distilled water. For all other compounds listed in Table 11 as having a practical significance, the intercept estimates for the water matrices given were significantly different from the distilled water intercept term. A review of the point estimates, statistical summaries and regression equations for accuracy and precision indicate the following:

TABLE 11-1. SUMMARY OF THE TESTS FOR DIFFERENCES ACROSS WATER TYPES - BASE/NEUTRAL COMPOUNDS

Compound	Observed F-Value	F-Test Significant at the 5% Level?	Statistical Significance Established by the 95% Confidence Limits?	Significant Water Type	Practical Significance
Acenaphthene	1.93	No	-		
Acenaphthylene	0.61	No	-		
Aldrin	9.30	Yes	Yes	Industrial Effluent	Yes
Anthracene	1.11	No	-		
β-BHC	0.88	No	-		
Benzo(a)anthracene	9.00	Yes	No		
Benzo(a)pyrene	4.54	Yes	No		
Benzo(b)fluoranthene	6.92	Yes	Yes	Surface	No
Bis(2-chloroethyl)ether	0.72	No	-		
Di-n-butylphthalate	1.26	No			
Dibenzo(a,h)anthracene	10.71	Yes	Yes	Tap, Surface, Ind. Effluent	Yes
Diethyl Phthalate	3.76	Yes	No		
Endosulfan Sulfate	1.96	No	-		
Fluoranthene	1.13	No	-		
Heptachlor	1.30	No	-		
Hexachlorobenzene	2.49	Yes	No		
Isophorone	1.84	No	-		
Naphthalene	1.99	No	-		
PCB-1260	8.78	Yes	Yes	Tap, Industrial Effluent	Yes
1,3-Dichlorobenzene	1.63	No	-		
2,6-Dinitrotoluene	1.05	No	-		
3,3'-Dichlorobenzidine	0.85	No	-		
4-Chlorophenyl Phenyl Ether	4.31	Yes	No		
4,4'-DDD	1.05	No	-		
4,4'-DDE	8.22	Yes	Yes	Industrial Effluent	No
Benzo(g,h,i)perylene	11.56	Yes	Yes	Tap, Surface, Ind. Effluent	Yes
Benzo(K)fluoranthene	4.71	Yes	No		
Benzyl Butyl Phthalate	1.82	No	-		
Bis(2-chloroethoxy)methane	3.17	Yes	Yes	Industrial Effluent	Yes
Bis(2-chloroisopropyl)ether	1.97	No	-		
Bis(2-ethylhexyl)phthalate	10.72	Yes	Yes	Tap, Surface, Ind. Effluent	Yes
Chrysene	5.06	Yes	No		
Di-n-octylphthalate	8.97	Yes	Yes	Tap, Surface, Ind. Effluent	Yes
Dieldrin	2.71	Yes	No		
Dimethyl Phthalate	1.28	No	-		
Endrin Aldehyde	3.63	Yes	No		
Fluorene	2.98	Yes	No		
Heptachlor Epoxide	3.98	Yes	No		
Hexachlorobutadiene	1.83	No	-		
Hexachloroethane	0.46	No	-		
Indeno(1,2,3-c,d)pyrene	4.80	Yes	No		
N-nitrosodi-n-propylamine	1.09	No	-		
Nitrobenzene	1.38	No	-		
Phenanthrene	2.09	Yes	Yes	Surface	No
Pyrene	4.64	Yes	Yes	Industrial Effluent	No
1,2-Dichlorobenzene	1.28	No	-		
1,2,4-Trichlorobenzene	1.26	No	-		
1,4-Dichlorobenzene	0.88	No	-		
2-Chloronaphthalene	2.00	No	-		
2,4-Dinitrotoluene	1.68	No	-		
4,Bromophenyl Phenyl Ether	2.90	Yes	No		
4,4-DDT	2.45	Yes	No		

TABLE 11-2. SUMMARY OF THE TESTS FOR DIFFERENCES ACROSS WATER TYPES - ACID COMPOUNDS

Compound	Observed F-Value	F-Test Significant at the 5% Level?	Statistical Significance Established by the 95% Confidence Limits?	Significant Water Type	Practical Significance
Pentachlorophenol	2.03	No	-		
Phenol	0.98	No	-		
2-Chlorophenol	0.17	No	-		
2-Methyl-4,6-dinitrophenol	2.16	Yes	No		
2-Nitrophenol	0.74	No			
2,4-Dichlorophenol	0.59	No			
2,4-Dimethylphenol	4.85	Yes	Yes	Tap, Ind. Effluent	Yes
2,4-Dinitrophenol	2.39	Yes	Yes	Industrial Effluent	No
2,4,6-Trichlorophenol	1.19	No	-		
4-Chloro-3-methylphenol	0.49	No	-		
4-Nitrophenol	0.83	No	-		

- the recovery at all concentration levels is low for aldrin in the industrial effluent, 2,4-dimethylphenol and PCB-1260 in the tap water and industrial effluent, and for dibenzo(a,h)anthracene, benzo(g,h,i)perylene, bis(2-ethylhexyl)phthalate and di-n-octylphthalate in all three water matrices;

- recoveries are extremely low at low level concentrations for dibenzo(a,h)anthracene;

- the recovery at low level concentrations is high for bis(2-chloroethoxy)methane for the industrial effluent relative to the low recovery for the distilled water;

- the % RSD-SA for dibenzo(a,h)anthracene in the distilled water is high at low level concentrations; and

- the % RSD-SA for 2,4-dimethylphenol in the tap water and industrial effluent is high at all concentration levels.

COMPARISON OF PUBLISHED METHOD PERFORMANCE DATA TO INTERLABORATORY DATA

Table 12 compares the accuracy and single analyst precision results from this interlaboratory study to the method performance results for Method 625 [8]. The accuracy and precision values listed for the method performance data represent the results from two to four laboratories. The values listed for the interlaboratory study were computed at a prepared concentration of 100 µg/L. These values are those which remained after the initial removal of approximately 20% of the reported values due to their identification as outliers by the IMVS program.

TABLE 12-1. COMPARISON OF ACCURACY AND PRECISION OF INTER-LABORATORY STUDY DATA (FOR A PREPARED CONCENTRATION OF 100 µg/L) AND PUBLISHED METHOD PERFORMANCE DATA - B/N COMPOUNDS

Compound	Data Source	Reagent Water*		Wastewater**	
		% Recovery	% RSD-SA	% Recovery	% RSD-SA
Acenaphthene	Method Perf.	77	23	83	29
	Inter. Study	96, 95	15, 10	91, 85	20, 15
Acenaphthylene	Method Perf.	78	22	82	23
	Inter. Study	90, 87	23, 16	97, 88	14, 13
Anthracene	Method Perf.	84	14	76	22
	Inter. Study	81, 82	21, 15	82, 75	18, 17
Benzo(a)anthracene	Method Perf.	83	19	75	28
	Inter. Study	87, 81	16, 25	71, 62	30, 40
Benzo(a)pyrene	Method Perf.	90	22	43	21
	Inter. Study	90, 78	23, 33	68, 56	40, 41
Benzo(b)fluoranthene	Method Perf.	96	68	41	21
	Inter. Study	91, 68	22, 35	65, 56	34, 40
Bis(2-chloroethyl)ether	Method Perf.	56	36	72	37
	Inter. Study	84, 84	34, 27	88, 90	25, 24
Di-n-butyl phthalate	Method Perf.	70	25	93	51
	Inter. Study	60, 59	15, 24	62, 58	26, 24
Dibenzo(a,h)anthracene	Method Perf.	82	39	70	40
	Inter. Study	93, 80	39, 38	63, 60	37, 44
Diethyl phthalate	Method Perf.	42	28	48	28
	Inter. Study	44, 43	31, 34	52, 57	41, 33
Fluoranthene	Method Perf.	89	19	80	26
	Inter. Study	82, 77	21, 13	72, 70	22, 20
Hexachlorobenzene	Method Perf.	79	20	71	22
	Inter. Study	75, 72	18, 25	70, 58	22, 17
Isophorone	Method Perf.	75	33	77	42
	Inter. Study	113, 112	28, 30	106, 109	21, 39
Naphthalene	Method Perf.	6	32	75	35
	Inter. Study	78, 78	20, 18	79, 72	23, 20
1,3-Dichlorobenzene	Method Perf.	55	28	54	24
	Inter. Study	85, 88	26, 25	91, 79	32, 34

(Continued)

TABLE 12-1. (Continued)

Compound	Data Source	Reagent Water*		Wastewater**	
		% Recovery	% RSD-SA	% Recovery	% RSD-SA
2,6-Dinitrotoluene	Method Perf.	79	18	79	25
	Inter. Study	102, 99	15, 18	102, 103	21, 25
3,3'-Dichlorobenzidine	Method Perf.	184	174	143	145
	Inter. Study	110, 98	35, 27	101, 113	54, 30
Benzo(k)fluoranthene	Method Perf.	96	68	47	27
	Inter. Study	85, 64	20, 20	63, 55	40, 29
Benzyl butyl phthalate	Method Perf.	47	32	74	43
	Inter. Study	64, 61	19, 21	51, 62	50, 50
Bis(2-chloroisopropyl) ether	Method Perf.	71	33	71	39
	Inter. Study	101, 91	24, 16	86, 95	31, 13
Bis(2-ethylhexyl) phthalate	Method Perf.	129	50	82	63
	Inter. Study	83, 61	27, 28	49, 51	38, 33
Chrysene	Method Perf.	83	19	75	28
	Inter. Study	92, 79	28, 18	62, 66	35, 33
Di-n-octylphthalate	Method Perf.	97	37	89	62
	Inter. Study	75, 53	23, 27	49, 48	44, 33
Dimethyl phthalate	Method Perf.	25	33	35	36
	Inter. Study	21, 30	55, 27	30, 34	72, 69
Fluorene	Method Perf.	77	16	80	20
		98, 83	12, 11	78, 73	22, 16
Hexachlorobutadiene	Method Perf.	46	25	48	28
	Inter. Study	70, 62	20, 17	62, 59	19, 24
Hexachloroethane	Method Perf.	46	21	52	26
	Inter. Study	72, 68	18, 22	68, 69	28, 21
Indeno(1,2,3-cd) pyrene	Method Perf.	65	37	81	43
	Inter. Study	75, 55	31, 26	47, 52	53, 37
N-nitrosodi-n-propylamine	Method Perf.	68	39	76	45
	Inter. Study	106, 101	28, 33	100, 89	40, 38
Nitrobenzene	Method Perf.	72	31	82	54
	Inter. Study	106, 98	20, 15	96, 98	32, 20

(Continued)

TABLE 12-1. (Continued)

Compound	Data Source	Reagent Water*		Wastewater**	
		% Recovery	% RSD-SA	% Recovery	% RSD-SA
Phenanthrene	Method Perf.	84	14	76	22
	Inter. Study	87, 79	13, 9	76, 82	16, 13
Pyrene	Method Perf.	86	15	80	23
	Inter. Study	84, 76	16, 10	73, 71	16, 17
1,2-Dichlorobenzene	Method Perf.	59	27	62	28
	Inter. Study	80, 79	21, 18	76, 74	28, 25
1,2,4-Trichlorobenzene	Method Perf.	64	16	69	26
	Inter. Study	93, 80	16, 16	78, 81	19, 14
1,4-Dichlorobenzene	Method Perf.	61	31	63	35
	Inter. Study	72, 73	24, 18	67, 69	28, 22
2-Chloronaphthalene	Method Perf.	73	24	79	27
	Inter. Study	89, 85	8, 10	79, 83	24, 15
2,4-Dinitrotoluene	Method Perf.	83	32	79	34
	Inter. Study	87, 80	13, 19	80, 92	22, 13
4-Bromophenyl phenyl ether	Method Perf.	80	17	75	20
	Inter. Study	90, 84	14, 15	82, 72	16, 22

* The two values given for the reagent water interlaboratory data in each column represent the distilled and tap waters, respectively.

** The two values given for the wastewater interlaboratory in each column represent the surface water and industrial effluent, respectively.

TABLE 12-2. COMPARISON OF ACCURACY AND PRECISION OF INTERLABORATORY STUDY DATA (For a prepared concentration of 100 µg/L) AND PUBLISHED METHOD PERFORMANCE DATA - ACID COMPOUNDS

Compound	Data Source	Reagent Water*		Wastewater**	
		% Recovery	% RSD-SA	% Recovery	% RSD-SA
Pentachlorophenol	Method Perf.	86	20	66	36
	Inter. Study	95, 86	27, 37	88, 76	19, 19
Phenol	Method Perf.	36	14	36	21
	Inter. Study	44, 45	28, 27	48, 45	24, 27
2-Chlorophenol	Method Perf.	70	23	71	25
	Inter. Study	78, 75	20, 24	75, 73	17, 14
2-Methyl-4,6-dinitrophenol	Method Perf.	83	18	90	35
	Inter. Study	71, 71	36, 39	87, 87	21, 16
2-Nitrophenol	Method Perf.	75	25	75	27
	Inter. Study	106, 95	18, 21	96, 91	17, 16
2,4-Dichlorophenol	Method Perf.	74	24	80	21
	Inter. Study	87, 83	16, 20	89, 82	14, 17
2,4-Dimethylphenol	Method Perf.	64	25	58	26
	Inter. Study	75, 59	18, 25	64, 51	29, 29
2,4-Dinitrophenol	Method Perf.	78	21	108	56
	Inter. Study	54, 50	42, 45	71, 70	30, 34
2,4,6-Trichlorophenol	Method Perf.	77	20	81	20
	Inter. Study	91, 89	18, 20	88, 83	16, 12
4,Chloro-3-methylphenol	Method Perf.	79	18	75	21
	Inter. Study	84, 78	24, 20	81, 77	18, 16
4-Nitrophenol	Method Perf.	41	20	43	16
	Inter. Study	60, 54	42, 33	59, 59	30, 38

*The two values given for the reagent water interlaboratory data in each column represent the distilled and tap waters, respectively.

**The two values given for the wastewater interlaboratory data in each column represent the surface water and industrial effluent, respectively.

In general, compound recoveries were higher and % RSD-SA values were lower (better precision) for the interlaboratory study than the published values. Recoveries for 38 B/N compounds in the interlaboratory study showed a relative increase of at least 20% to published recoveries for 16, 15, 11 and 9 compounds for distilled water, tap water, surface water and the industrial effluent, respectively, while 20% or greater decreases were observed for 3, 5, 7 and 5 compounds, respectively. % RSD-SA values were at least 20% lower for 18, 22, 18 and 20 compounds for the four water types, respectively, while 20% or greater increases were observed for only 3, 4, 8 and 5 compounds, respectively.

Recoveries of acidic compounds in the interlaboratory study showed a 20% or greater relative increase for 3, 3, 4 and 3 compounds for the distilled, tap and surface waters and the industrial effluent, respectively, while 20% or greater decreases were observed for only one compound for each water type. Improved precision was not as clearly defined for acidic compounds with decreases in precision of at least 20% for three, two, seven and seven compounds for the four water types, respectively, while increases of at least 20% were observed for six, four, one and two compounds.

REVISED EQUATIONS

A review of the acid data remaining after the IMVS outlier screening indicated some potential problems with the data for two of the compounds, 2-methyl-4,6-dinitrophenol and 2,4-dinitrophenol (see statistical summaries on p. 102 and p. 106, respectively). For 2-methyl-4,6-dinitrophenol, results for the two lowest Youden pairs appeared to be out-of-line with the remaining data. The data for these low-level ampules were eliminated, and the equations revised using four points instead

of six. Very high results were found for 2,4-dinitrophenol on the two highest concentrates which indicated a dilution error by a factor of 2. The true values were changed and new regression equations were generated. Table 13 presents the revised equations and Table 14 presents the revised accuracy and precision estimates.

RESPONSE TO QUESTIONNAIRE

A questionnaire for Method 625 was provided for all participating laboratories. Each of the 15 laboratories responded to the questionnaire. Results for both the B/N and acid compounds are presented in this section.

Summaries of instrument and calibration parameters are given in Tables 15-1 and 15-2 for B/N compounds and acids, respectively. Of the 15 participating laboratories, 4 used Hewlett-Packard instruments while the remaining 11 used Finnigan instruments. Three laboratories used two different Finnigan instruments for the two analyses.

Fourteen laboratories used SP-1240-DA for acid analyses. Of these, 11 specified 100/120 mesh and 9 specified 6 foot or 1.8 meter glass columns. One laboratory did not specify the packing or column used.

The packing used by 14 laboratories for B/N analyses was 3% SP-2250 on Supelcoport. A mesh size of 100/120 was specified by eight laboratories while one specified 80/100 mesh. One laboratory used an equivalent packing, 3% OV-17 on 80/100 mesh Supelcoport. Glass columns of 6 feet, 1.8 meters or 2 meters were specified by 10 laboratories.

TABLE 13. REVISED REGRESSION EQUATIONS FOR ACCURACY AND PRECISION

Water Type	2-Methyl-4,6-Dinitrophenol	2,4-Dinitrophenol
Applicable Conc. Range - µg/L	(144 - 1067)	(90 - 2666)
Distilled Water		
Single-Analyst Precision	SR = 0.05X + 42.29	SR = 0.38X + 2.36
Overall Precision	S = 0.26X + 23.10	S = 0.42X + 26.29
Accuracy	X = 1.04C - 28.04	X = 0.81C - 18.04
Tap Water		
Single-Analyst Precision	SR = 0.15X + 0.38	SR = 0.33X + 6.20
Overall Precision	S = 0.31X + 23.39	S = 0.48X + 13.02
Accuracy	X = 1.-0C - 29.72	X = 0.82C - 24.25
Surface Water		
Single-Analyst Precision	SR = 0.11X + 0.66	SR = 0.28X + 1.15
Overall Precision	S = 0.35X + 21.03	S = 0.29X + 26.97
Accuracy	X = 1.07C - 13.19	X = -0.34C + 212.78
Industrial Effluent		
Single-Analyst Precision	SR = 0.15X - 26.29	SR = 0.25X + 6.43
Overall Precision	S = 0.42X - 2.86	S = 0.36X + 22.11
Accuracy	X = 0.96C + 0.41	X = 0.68C + 7.82

X = mean recovery
C = prepared concentration

TABLE 14. REVISED ACCURACY AND PRECISE ESTIMATES

Compound	Distilled Water			Tap Water			Surface Water			Ind. Effluent		
	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA	%REC	%RSD	%RSD -SA
2-Methyl-4,6-Dinitrophenol	76	56	61	70	64	16	94	57	12	96	39	0
2,4-Dinitrophenol	63	84	42	58	71	44	179	44	29	76	65	33

TABLE 15-1. SUMMARY OF INSTRUMENT AND CALIBRATION PARAMETERS - B/N ANALYSES

Lab Code	Instrument Make	Age (yr)	Column	Column Conditions	Primary Source of Standards	Calibration Points (µg/L)
1.	Finnigan 4023	4	6'; 3% SP-2250 on 100/120 Supelcoport	50°C for 4 min; 8°C/min to 270°C; hold at 270°C	Supelco; pesticides Prepared inhouse	~10, ~20, ~70, ~180
2.	Finnigan OWA-1020	1	6' x 2mm ID; 3% SP-2250 DB on 100/120	50°C for 4 min; 8°C/min to 270°C	Prepared inhouse	20, 50, 100 (50 only for pesticides)
3.	Finnigan 3200	5	6' x 2mm ID; SP-2250	40°C for 2 min; 12°C/min to 300°C	EPA (Radian)	25, 50, 200
4.	Hewlett-Packard 5985A	4.5	2m x 2mm ID, glass; 3% SP-2250 on 100/120 Supelcoport	50°C for 4 min; 8°C/min to 270°C; 270°C for 30 min	Supelco	10, 50, 100
5.	Hewlett-Packard 5993B Option 95	1	3% SP-2250	60°C for 4 min; 10°C/min to 270°C; 270°C for 30 min	Supelco; pesticides Prepared inhouse	15, 24, 33, 4; 10, 20, 30
6.	Finnigan 3200	9	6' glass; 3% SP-2250	50°C for 4 min; 8°C/min to 285°C	Not specified	25, 100, 200 (25, 50 for pesticides)
7.	Finnigan OWA-30B	2	1.8m x 2 mm ID glass; 3% SP-2250 DB on 100/120 Supelcoport	50°C for 4 min; 8°C/min to 270°C; 270°C for 55 min	Supelco; pesticides Prepared inhouse	50, 100, 200
8.	Finnigan 3200	5	3% SP-2250 on 80/100 Supelcoport	50°C; 8°C/min to 310°C	EPA (Radian)	10, 50, 200
9.	Hewlett-Packard 5985A	6	6' x 2mm ID glass; 3% SP-2250	50°C for 4 min; 8°C/min to 290°C	EPA	10, 50, 100
10.	Finnigan 2100	4	3% SP-2250	50°C for 4 min; 8°C/min to 290°C	Supelco	Not specified
11.	Finnigan 4021	2	3% OV-17 on 100/120 Supelcoport	35°C; 8°C/min to 280°C; 280°C for 14.3 min	Prepared inhouse	10, 50, 100, 300
12.	Hewlett-Packard 5985	6	3% SP-2250 on 100/120 Supelcoport	50°C for 4 min; 8°C/min to 270°C; 270°C for 30 min	Prepared inhouse	20-40, 100-200, 200-400
13.	Finnigan 4023	5	1.8m x 2mm ID, Glass; 3% SP-2250	50°C for 4 min; 8°C/min to 270°C; hold at 270°C	Prepared inhouse	Not specified
14.	Finnigan OWA-1020	1	6' glass; 3% SP-2250 on 100/120 Supelcoport	50°C for 4 min; 8°C/min to 270°C	Prepared inhouse	8 points (1-200 x detection limits)
15.	Finnigan 4021	5	6'; 3% SP-2250 on 100/120 Supelcoport	50°C for 4 min; 8°C/min to 270°C	EPA (Radian)	20, 50, 100

TABLE 15-2. SUMMARY OF INSTRUMENT AND CALIBRATION PARAMETERS - ACID ANALYSES

Lab Code	Instrument Make	Age (yr)	Column	Column Conditions	Primary Source of Standards	Calibration Points (µg/L)
1.	Finnigan OWA-20	2.5	6'; 1% SP-1240 DA on 100/120 Supelcoport	70°C for 2 min; 8°C/min to 180°C; hold at 180°C	Supelco	∿10, ∿20, ∿90, ∿180
2.	Finnigan OWA 1020	1	6' x 2mm ID 1% SP-1240 DA on 100/120	70°C for 2 min; 8°C/min to 180°C	Prepared inhouse	40, 100, 200
3.	Finnigan 3200	5	Not specified	Not specified	EPA (Radian)	25, 50, 200
4.	Hewlett-Packard 5985A	4.5	6' x 2mm ID, glass; 1% SP-1240 DA on 100/120 Supelcoport	70°C for 2 min; 8°C/min to 200°C; 200°C for 5 min	Supelco	20-100, 50-250, 100-500
5.	Hewlett-Packard 5993B Option 95	1	1% SP-1240 DA	85°C for 2 min; 8°C/min to 200°C	Supelco	25-125, 50-250, 250-1250
6.	Finnigan 4021	5	6' glass; 1% SP-1240 DA	70°C; 10°C/min to 200°C	Not specified	25, 100, 200
7.	Finnigan OWA-3013	2	1.8m x 2 mm ID glass; 1% SP-1240 DA on 100/120 Supelcoport	70°C for 2 min; 8°C/min to 180°C; 180°C for 30 min	Supelco	50, 100, 200
8.	Finnigan 3200	5	1% SP-1240 DA	60°C; 10°C/min to 190°C	Supelco	10, 50, 200
9.	Hewlett-Packard 5985A	6	6' x 2mm ID glass; 1% SP-1240 DA	70°C; 10°C/min to 200°C	EPA	50, 100, 200
10.	Finnigan 2100	4	1% SP-1240 DA	70°C for 2 min; 8°C/min to 185°C	Supelco	Not specified
11.	Finnigan 4021	2	1% SP-1240 DA on 100/120 Supelcoport	70°C; 8 C/min to 225°C; 225°C for 0.8 min	Prepared inhouse	10, 30, 100, 300, 1000
12.	Hewlett-Packard 5985	6	1% SP-1240 DA on 100/120 Supelcoport	70°C for 2 min; 8°C/min to 200°C	Prepared inhouse	20-40, 100-200, 200-400
13.	Finnigan 3200	7	1.8m x 2mm ID, glass; 1% SP-1240 DA	70°C for 2 min; 8°C/min to 200°C	Prepared inhouse	Not specified
14.	Finnigan OWA-1020	1	6' glass; 1% SP-1240 DA on 100/120 Supelcoport	70°C for 2 min; 8°C/min to 200°C	Prepared inhouse	7 points (1-250 x detection limits)
15.	Finnigan 4021	5	6'; 1% SP-1240 DA on 100/120 Supelcoport	70°C for 2 min; 8°C/min to 200°C	EPA (Radian)	20, 50, 100

Nine laboratories used prepared standards obtained from Supelco or Radian-EPA. Two of these laboratories listed additional suppliers including Research Triangle Park and Aldrich. Four laboratories prepared stock solutions from neat compounds obtained primarily from Chem Service with secondary sources including EPA, Aldrich, Analabs, PCR and Supelco. Two laboratories did not specify sources. A minimum of three points for calibration, typically in the range of 10 µg/L - 200 µg/L, were used by 12 laboratories with the number of points ranging up to eight. In some cases, the acid calibration curves were extended to as much as 1250 µg/L. Three laboratories did not specify the number of calibration points used.

Six laboratories reported no problems with the calibration procedures. Problems encountered by the remaining laboratories included:

- poor resolution of 1,3- and 1,4-dichlorobenzene, fluorene and 2,4-dinitrotoluene, acenaphthene and acenaphthylene, the benzofluoranthene isomers, chrysene and benzoanthracene, and phenanthrene and anthracene (this also led to problems in peak identification);

- the absorption of highly polar compounds resulting in nonlinear calibration curves;

- the absence of high concentration surrogate solutions for performing calibrations simultaneously with the nonsurrogate standards resulting in failure to reflect possible synergistic effects;

- difficulty in meeting B/N linearity criteria;

- poor response for nitrophenols, pentachlorophenol, and aldrin resulting in nonlinear curves;

- inconsistency in RF values, especially for the benzidines; and

- failure to detect all pesticides, especially DDT, DDD, DDE and BHC isomers.

Quality assurance/quality control (QA/QC) measures are summarized in Table 16. They included surrogate control charts, system blanks, duplicate analyses, replicate injections and check standards.

Additional QA/QC measures included statistical evaluations, background analyses, analyzing spiked samples, analyzing dilutions of Youden pairs, and spiking all samples with DFTPP.

No QA/QC problems were reported by 12 laboratories. One laboratory complained of an insufficient volume of spiking solution for duplicate analyses. Other problems noted included the quantitative contribution to the pentachlorophenol surrogate by the nonsurrogate analog, poor extraction efficiency of the dimethylphthalate surrogate, and minor problems with obtaining accurate standards.

Eight laboratories reported problems with sample extraction. These included formation of emulsions in various samples, formation of a yellow precipitate upon the addition of the 1-1, 1-2, 2-1, 3-1, and 3-2 Youden pairs to samples, difficulty in extracting the industrial effluent due to high oil concentration, and the detection of B/N compounds in the acid fraction indicating poor separation.

TABLE 16. SUMMARY OF QA/QC PROCEDURES

Code	Surrogate Control Charts	System Blanks	Duplicate Analyses	Replicate Injections	Check Standards
1	NP	With each sample lot	10% of samples	NP	NP
2	Each sample	1	NP	As required	Daily
3	Each shift	At least 1/water type	NP	All 1-1, 1-2 pairs; Industrial effluent	Each shift
4	Each shift	Each 12 samples	Background and check samples	NP	2/water type
5	NP	6 for B/Ns; 6 for acids	7 for B/Ns	NP	4 for B/Ns; 4 for acids
6	NP	Each daily	NP	NP	Daily
7	Each sample	15% of samples	15% of samples	NP	Quarterly
8	NP	Daily	NP	NP	Each sample set
9	Daily	Daily	NP	10% of samples	Daily
10	NP	Daily	Daily	Daily	Weekly
11	Ongoing	Daily	NP	NP	NP
12	Each sample	Each 5-8 samples	20% of samples	Daily	Daily
13	NP	NP	NP	NP	Daily
14	Daily	1/water type	NP	Daily	Daily
15	NP	1/sample set	10% of samples	NP	Each shift

NP = Not Performed

Five laboratories reported problems in sample concentration including difficulty in concentrating the industrial effluent due to high oil concentration (2), and sample bumping with microSnyder column concentrators (3).

Seven laboratories reported no instrumental problems. Problems reported by the remaining laboratories included difficulty in meeting tuning criteria (4), and minor instrument malfunctions (4) without significant analytical impact.

Problems with interferences were reported by 11 laboratories. These included:

- coelution and poor resolution of many compounds;
- high concentrations of 2,4-dinitrophenol causing a large shoulder on the m/e 184 peak;
- high hydrocarbon and/or background interferences in the industrial effluent sample (four laboratories);
- pentachlorophenol contribution to pentachlorophenol surrogate ions;
- the contribution of surrogates to analogs and vice versa, in general; and
- suspected impurities in spiking solutions.

Nine laboratories reported problems in peak identification. In addition to previously discussed problems of coelution, these included:

- poor peak shape and the presence of only one or two major ions for compounds at low concentrations;

- variability of the retention times of highly polar compounds of up to 184 seconds depending on concentration and associated compounds;

- poor chromatography resulting in difficulty in detection of 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol and shared ions between these compounds and d_3-dimethylphthalate causing difficulties in quantitation; and

- difficulties in identification due to tailing at low concentrations.

Miscellaneous problems encountered included:

- degredation of endosulfan sulfate below concentrations of 1000 ppm in both samples and standards;

- degredation of DDT to DDD and DDE (two laboratories);

- response of compounds out of the linear range of the instrument;

- high recovery of surrogates due to difficulties in calibration caused by the inability to calibrate for surrogates and nonsurrogates simultaneously;

- difficulty in meeting the tailing factor criterion for acids;

- possible inaccuracies due to the unknown effects of surrogates as carriers for nonsurrogates; and

- poor recoveries of the dimethyl phthalate and pentachlorophenol surrogates.

Recommendations for improving Method 625 were made by 11 laboratories. These included:

- using fused silica capillary columns, especially for pesticide analysis to avoid degredation (seven laboratories);

- using multiple internal standards for B/N analysis, specifically deuterated naphthalene, phenanthrene and chrysene to improve RF values over time;

- using m/e 360 instead of m/e 330 for Aroclor 1260 because of the former's abundance;

- using m/e 70 for n-nitrosodipropylamine to provide more consistent quantitation;

- dropping the pentachlorophenol surrogate because of interference with its analog and the dimethyl-phthalate surrogate because of poor chromatography;

- performing a study using surrogates for each analyte to establish complete recovery data;

- using 1N NaOH or a weaker base instead of 10N NaOH for lowering sample pH to avoid saponification and subsequent poor recovery of phthalates;

- coating contacted surfaces with phosphoric acid or a weak organic acid to reduce tailing;

- performing acid and base/neutral extractions on separate sample aliquots to avoid loss of low concentration components in the alternate fraction;

- developing an alternative packing for acids to reduce tailing;

- performing pesticide analyses by Method 608 with GC-MS confirmation of only those compounds above 1 ppb; and

- providing provisions within the method to handle saturated peaks and peaks outside of the calibration range.

SECTION 7

EVALUATION OF SURROGATE COMPOUNDS

In order to examine the relationship between surrogate and spike recoveries, surrogate recoveries were correlated with the recoveries for each priority pollutant in the appropriate fraction.

Table 17 presents the correlation matrices for the B/N and acid fractions. Potential outliers were not discarded from the recovery data in performing the correlation analysis. The influence of outliers in the data were minimized by using Spearman's coefficient of rank correlations [9], which are correlations of the ranks of the variables. Approximately 350 data pairs were used to calculate each of the coefficients.

The correlation coefficient is a measure of the strength of the linear relationship between two variables. A correlation of one indicates that the two variables are perfectly linearly related and that one increases as the other increases. A correlation of minus one indicates that a perfect linear relationship exists, but that one variable decreases as the other increases. A correlation of zero indicates that there is no linear relationship at all between the two variables. The square of the correlation coefficient is interpretable as the fraction of the variability in one variable that can be explained in terms of the other.

Statistical significance is important because even if two variables have no true or repeatable relationship, a correlation coefficient computed from a finite sample would not be expected

TABLE 17-1. CORRELATION COEFFICIENTS OF SURROGATE RECOVERIES AND SPIKE RECOVERIES - B/N(1) FRACTION

COMPOUND	RETENTION TIME (MINUTES)	SURROGATE				
		1-FLUORO-NAPHTHALENE (RT=12.2*)	2-FLUORO-BIPHENYL (RT=15.5*)	DIMETHYL-PHTHALATE-D6 (RT=18.3)	4,4'DIBROMOOCTA-FLUOROBIPHENYL (RT=19.3*)	BENZO(G,H,I)-PERYLENE-13/C12 (RT=45.1)
1,3-DICHLOROBENZENE	7.4	0.370	0.317	-0.162	0.068	0.035
1,4-DICHLOROBENZENE	7.8	0.254	0.327	-0.256	0.086	0.018
BIS(2-CHLOROETHYL)ETHER	8.4	0.261	0.277	0.001	0.199	0.267
1,2-DICHLOROBENZENE	8.4	0.297	0.369	-0.332	0.118	0.059
HEXACHLOROETHANE	8.4	0.442	0.311	-0.184	0.173	0.081
BIS(2-CHLOROISOPROPYL)ETHER	9.3	0.332	0.323	-0.038	0.145	0.155
NITROBENZENE	11.1	0.274	0.252	0.009	0.032	0.060
HEXACHLOROBUTADIENE	11.4	0.434	0.360	-0.197	0.350	0.160
1,2,4-TRICHLOROBENZENE	11.6	0.473	0.371	-0.397	0.232	0.112
ISOPHORONE	11.9	0.206	0.322	-0.072	0.047	0.177
NAPHTHALENE	12.1	0.503	0.464	-0.194	0.320	0.131
BIS(2-CHLOROETHOXY)METHANE	12.2	0.235	0.270	-0.064	-0.065	0.106
2-CHLORONAPHTHALENE	15.9	0.469	0.441	-0.232	0.176	0.044
ACENAPHTHYLENE	17.4	0.456	0.364	-0.142	0.132	-0.070
ACENAPHTHENE	17.8	0.612	0.533	-0.176	0.397	0.156
DIMETHYL PHTHALATE	18.3	-0.087	-0.093	0.654	-0.114	-0.071
2,6-DINITROTOLUENE	18.7	0.413	0.343	0.021	0.236	0.200
4-CHLOROPHENYL PHENYL ETHER	19.5	0.143	0.073	0.228	0.354	0.178
FLUORENE	19.5	0.346	0.387	0.021	0.160	0.094
2,4-DINITROTOLUENE	19.8	0.216	0.265	-0.180	0.171	0.161
DIETHYL PHTHALATE	20.1	-0.142	-0.084	0.686	-0.076	-0.017
HEXACHLOROBENZENE	21.0	0.357	0.441	-0.149	0.726**	0.478
4-BROMOPHENYL PHENYL ETHER	21.2	0.211	0.319	-0.149	0.418	0.293
ANTHRACENE	22.8	0.256	0.398	-0.154	0.274	0.291
PHENANTHRENE	22.8	0.208	0.327	-0.110	0.151	0.068
B-BHC	23.4	0.241	0.138	0.117	0.201	0.048
HEPTACHLOR	23.4	0.220	0.265	-0.142	0.367	0.533
D-BHC	23.7	-0.115	-0.090	0.554	-0.088	0.008
ALDRIN	24.0	0.218	0.281	-0.273	0.490	0.484
DI-N-BUTYLPHTHALATE	24.0*	0.083	0.221	0.360	0.255	0.178
HEPTACHLOR EPOXIDE	25.6	0.151	0.152	-0.054	0.380	0.314
FLUORANTHENE	26.5	0.261	0.368	-0.189	0.416	0.347
4,4'-DDE	27.2	0.080	0.224	-0.017	0.503	0.647
DIELDRIN	27.2	0.157	0.118	-0.013	0.246	0.211
PYRENE	27.3	0.272	0.215	-0.080	0.385	0.296
4,4'-DDD	28.6	-0.119	0.022	0.131	0.117	0.315

TABLE 17-1. CORRELATION COEFFICIENTS OF SURROGATE RECOVERIES AND SPIKE RECOVERIES - B/N(1) FRACTION, Continued

COMPOUND	RETENTION TIME (MINUTES)	SURROGATE				
		1-FLUORO-NAPHTHALENE (RT=12.2*)	2-FLUORO-BIPHENYL (RT=15.5*)	DIMETHYL-PHTHALATE-D6 (RT=18.3)	4,4'DIBROMOOCTA-FLUOROBIPHENYL (RT=19.3*)	BENZO(G,H,I)-PERYLENE-13/C12 (RT=45.1)
4,4'-DDT	29.3	0.062	0.108	0.062	0.215	0.316
ENDOSULFAN SULFATE	29.8	-0.102	0.036	0.379	-0.010	0.160
BENZYL BUTYL PHTHALATE	29.9	-0.038	-0.001	0.549	0.110	0.106
BIS(2-ETHYLHEXYL)PHTHALATE	30.6	0.099	0.156	-0.146	0.255	0.574
BENZO(A)ANTHRACENE	31.5	0.075	0.282	-0.168	0.398	0.514
CHRYSENE	31.5	0.069	0.224	-0.154	0.411	0.489
3,3'-DICHLORCBENZIDINE	32.2	0.113	0.176	-0.144	0.206	0.352
DI-N-OCTYLPHTHALATE	32.5	0.023	0.118	-0.129	0.268	0.550
BENZO(B)FLUORANTHENE	34.9	0.044	0.255	-0.110	0.465	0.702
BENZO(K)FLUORANTHENE	34.9	0.101	0.227	-0.106	0.392	0.544
BENZO(A)PYRENE	36.4	0.161	0.352	-0.154	0.505	0.708**
INDENO(1,2,3-C,D)PYRENE	42.7	0.003	0.132	-0.113	0.233	0.515
DIBENZO(A,H)ANTHRACENE	43.2	-0.031	0.159	-0.049	0.357	0.711**
BENZO(G,H,I)PERYLENE	45.1	-0.059	0.078	-0.078	0.215	0.542
PCB-1260	23-32	-0.091	0.078	-0.127	0.292	0.600
ENDRIN ALDEHYDE	ND	-0.172	-0.189	0.251	-0.010	0.060
N-NITROSODI-N-PROPYLAMINE	ND	0.204	0.243	-0.165	0.024	0.184

ND = NOT DETERMINED
RT = RETENTION TIME

* RETENTION TIME FOR THIS COMPOUND WAS NOT AVAILABLE IN THE EPA METHOD 625 WRITEUP. THE RETENTION TIME GIVEN WAS ESTIMATED FROM THE INTERLABORATORY STUDY DATA.

** AT LEAST 50 PERCENT OF VARIATION OF THE SPIKE RECOVERIES CAN BE EXPLAINED IN TERMS OF THE SURROGATE RECOVERIES.

TABLE 17-2. CORRELATION COEFFICIENTS OF SURROGATE RECOVERIES AND SPIKE RECOVERIES - ACID FRACTION

COMPOUND	RETENTION TIME (MINUTES)	SURROGATE			
		PHENOL-D6 (RT=8.0)	2,4-DIMETHYL-PHENOL-3,5,6-D3 (RT=9.4)	PENTACHLORO-PHENOL-13/C6 (RT=17.5)	2-FLUORO-PHENOL (RT=5.2*)
2-CHLOROPHENOL	5.9	0.161	0.394	-0.104	0.377
2-NITROPHENOL	6.5	0.135	0.364	0.230	0.325
PHENOL	8.0	0.513	0.231	-0.228	0.361
2,4-DIMETHYLPHENOL	9.4	0.179	0.733**	0.013	0.327
2,4-DICHLOROPHENOL	9.8	0.165	0.409	0.014	0.336
2,4,6-TRICHLOROPHENOL	11.8	0.044	0.289	0.101	0.251
4-CHLORO-3-METHYLPHENOL	13.2	0.197	0.607	0.029	0.356
2,4-DINITROPHENOL	15.9	0.231	-0.038	0.066	0.071
2-METHYL-4,6-DINITROPHENOL	16.2	0.259	0.089	-0.037	0.179
PENTACHLOROPHENOL	17.5	0.177	0.107	0.288	0.196
4-NITROPHENOL	20.3	0.325	-0.002	0.013	0.140

ND = NOT DETERMINED
RT = RETENTION TIME

* RETENTION TIME FOR THIS COMPOUND WAS NOT AVAILABLE IN THE EPA METHOD 625 WRITEUP. THE RETENTION TIME GIVEN WAS ESTIMATED FROM THE INTERLABORATORY STUDY DATA.

** AT LEAST 50 PERCENT OF VARIATION OF THE SPIKE RECOVERIES CAN BE EXPLAINED IN TERMS OF THE SURROGATE RECOVERIES.

to be exactly zero. For the data presented in the tables, a correlation coefficient is statistically significant at the 0.01 level if the coefficient is greater than 0.14 (or less than -0.14). A significant correlation indicates a real relationship between the compound and the surrogate. There is less than one chance in 100 that a particular one of the significant correlations could have occurred by random chance if the variables did not have an actual relationship.

With the exception of the surrogate compound, dimethylphthalate-d_6, correlation coefficients were generally positive. Figures 1 through 4 present selected plots of spiked recoveries versus surrogate recoveries for those relationships which explained at least 50% of variation of the recoveries for the compound in terms of the surrogate recoveries. Figure 5 shows a typical set of data for a nonsignificant relationship.

The analysis of the surrogate recovery data from the interlaboratory study do not indicate strong relationships between the recoveries of the surrogates and the recoveries of the compounds of interest. A surrogate was identified for only three B/N compounds (benzo(a)pyrene, dibenzo(a,h) anthracene, and hexachlorobenzene) and one acid compound (2,4-dimethyl phenol) which could explain greater than 50% of the variation in the recoveries of the compounds.

These results do not imply that surrogate/compound relationships do not exist. As long as the recoveries of a compound remain in a state of statistical control, then the variations in recoveries are expected to be random. The variation of the test methods (coefficient of variations generally greater than 20%) make it difficult to observe surrogate relationships within a "narrow"

SPIKE RECOVERIES VS SURROGATE RECOVERIES (%)
B/N (1) FRACTION

r = 0.708

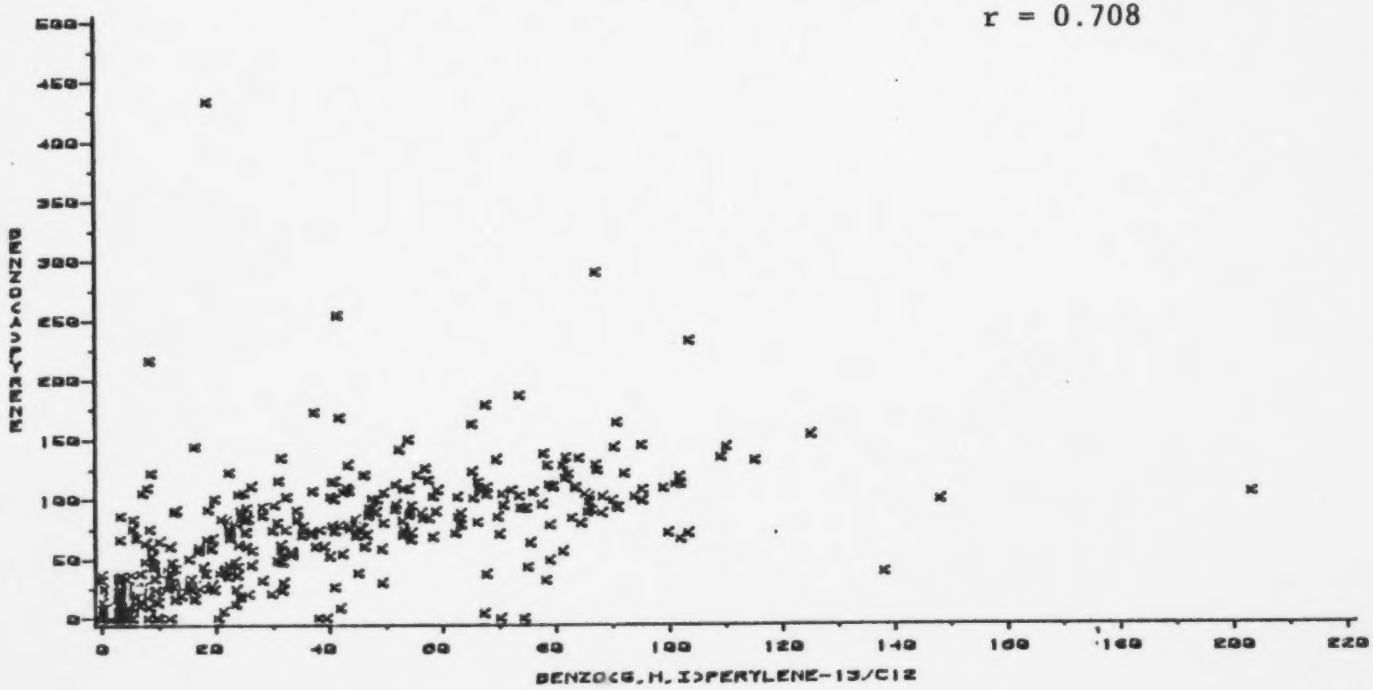

Figure 1.

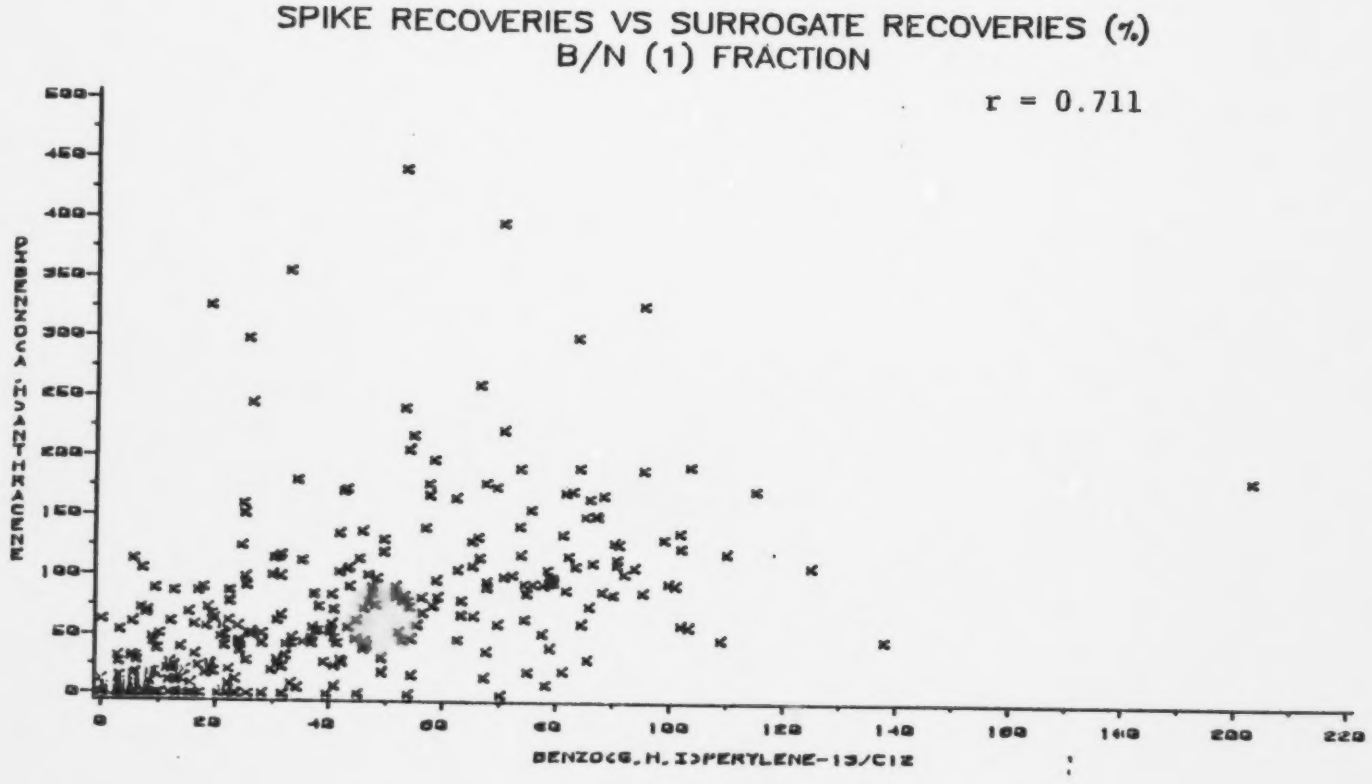
SPIKE RECOVERIES VS SURROGATE RECOVERIES (%)
B/N (1) FRACTION
r = 0.711
DIBENZO(A,H)ANTHRACENE
BENZO(G,H,I)PERYLENE-13/C12
0
50
100
150
200
250
300
350
400
450
500
0
20
40
60
80
100
120
140
160
180
200
220

Figure 2.

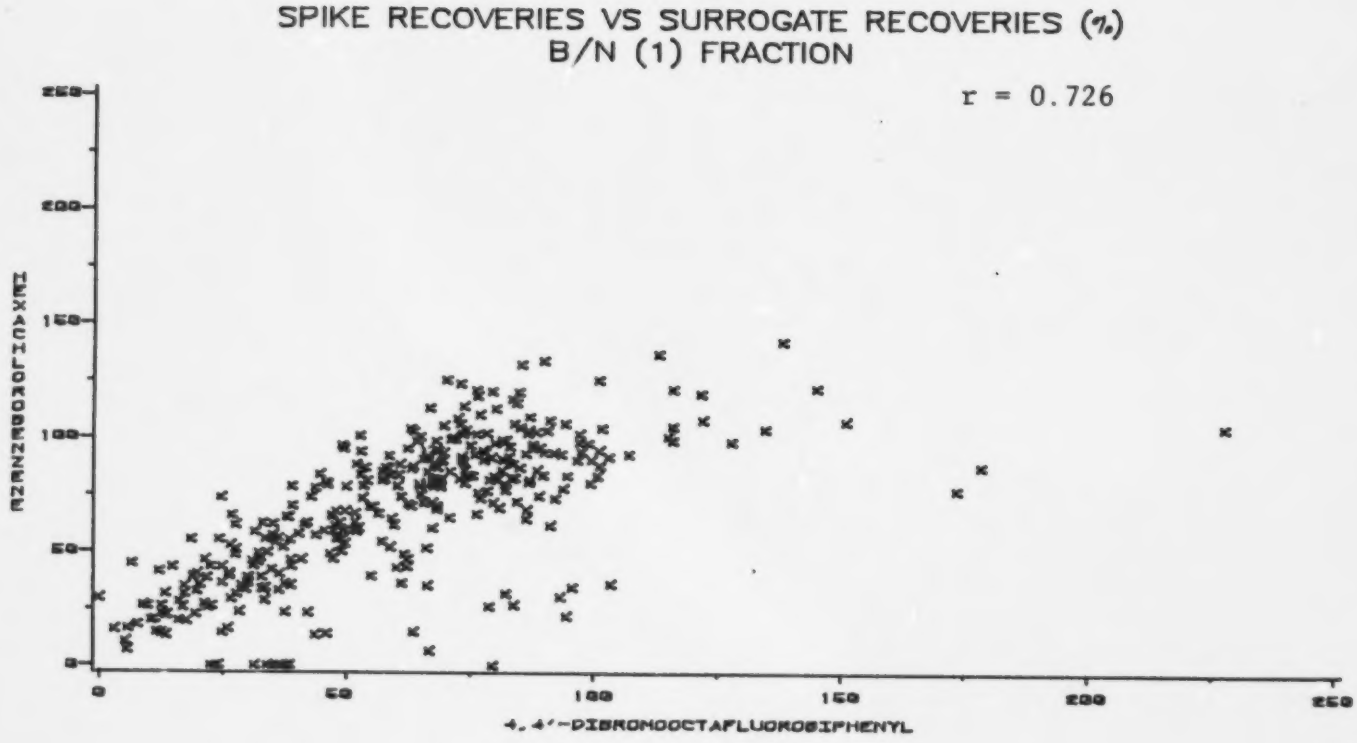
SPIKE RECOVERIES VS SURROGATE RECOVERIES (%)
B/N (1) FRACTION
r = 0.726
250
200
150
100
50
0
0
50
100
150
200
250
4,4'-DIBROMOOCTAFLUOROBIPHENYL

Figure 3.

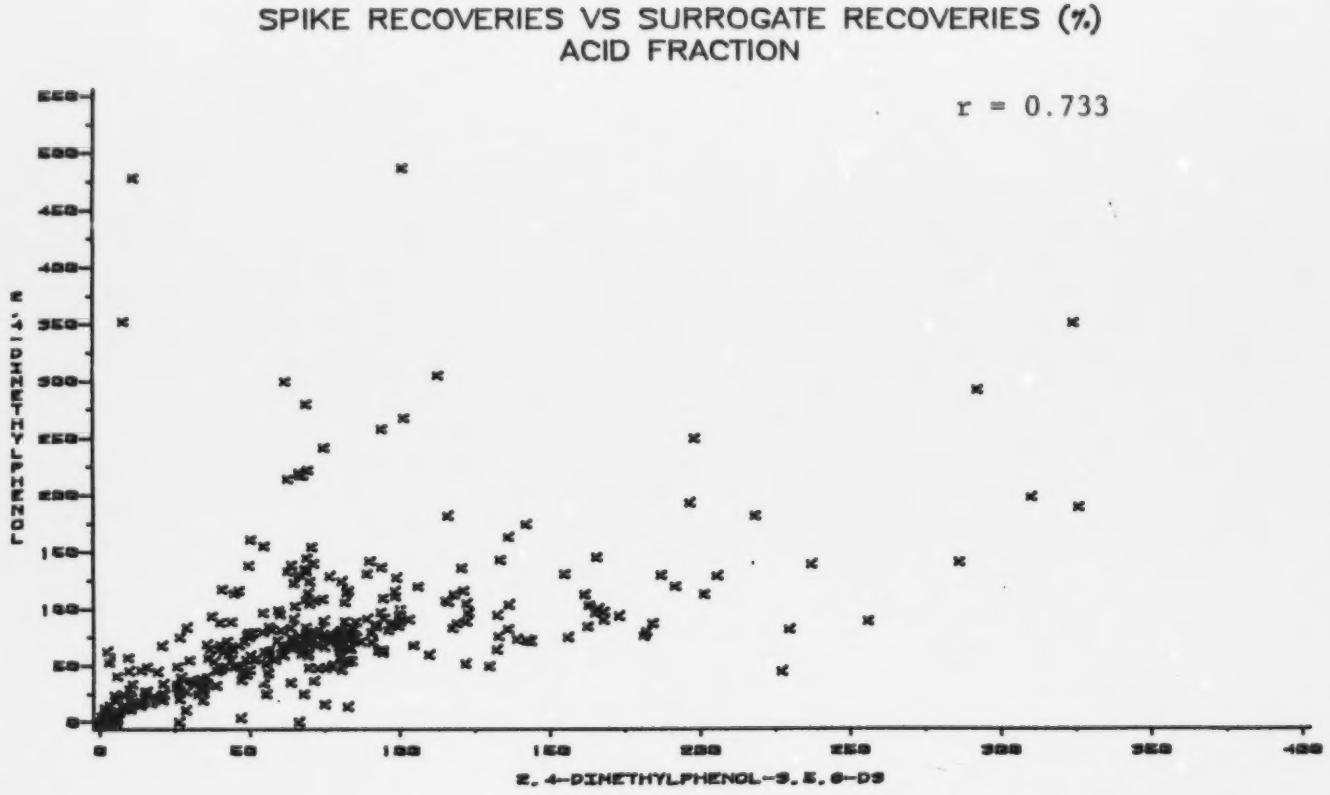
SPIKE RECOVERIES VS SURROGATE RECOVERIES (%)
ACID FRACTION
r = 0.733
2,4-DIMETHYLPHENOL
2,4-DINETHYLPHENOL-S,E,G-DS

Figure 4.

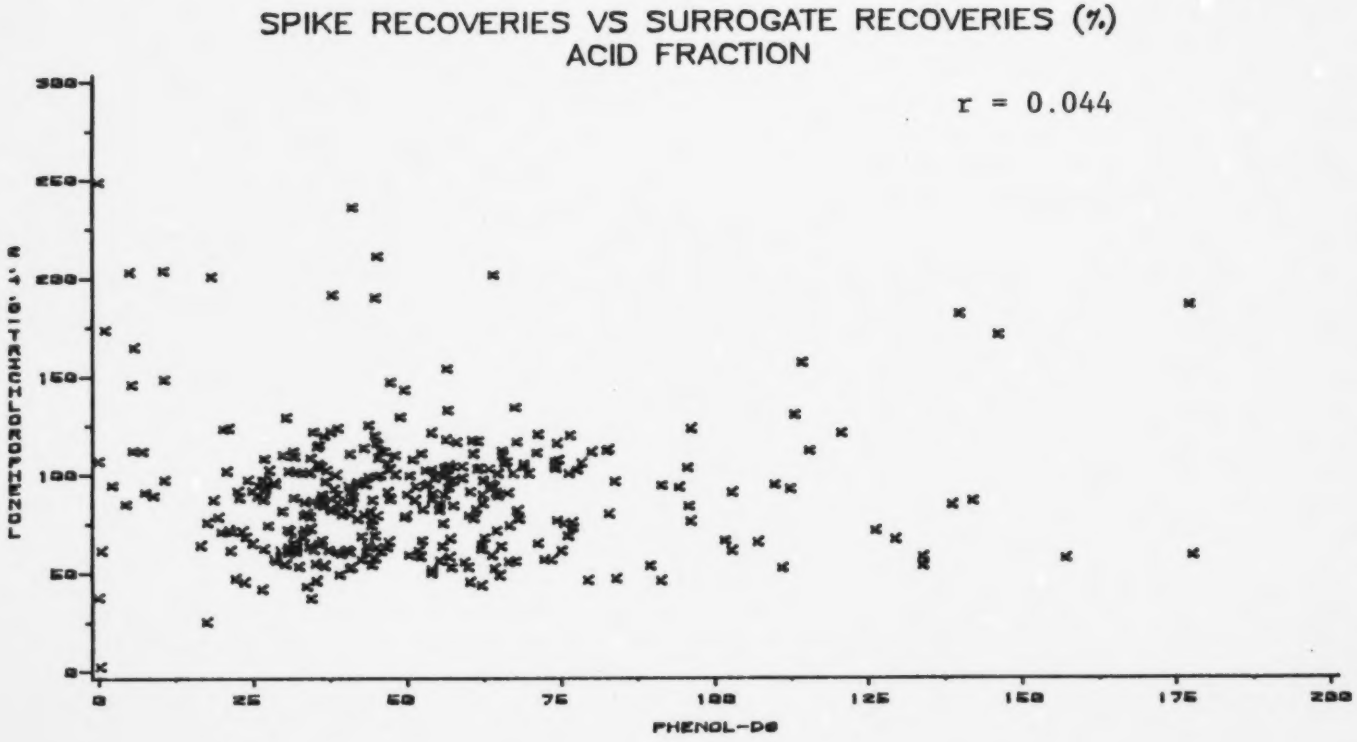
SPIKE RECOVERIES VS SURROGATE RECOVERIES (%)
ACID FRACTION
r = 0.044
2,4,6-TRIBROMOPHENOL-SA
PHENOL-D6
0
25
50
75
100
125
150
175
200

Figure 5.

range of recoveries. In order to establish and quantify surrogate relationships, it is necessary to purposely decrease and increase the compound recoveries. This, of course, was contrary to the objectives of this interlaboratory study.

For B/N compounds eluting up to 20.1 minutes (hexachlorobenzene), 2-fluorobiphenyl and 1-fluoronaphthalene tend to have the highest correlation coefficient. For compounds eluting after 20.1 minutes, benzo(g,h,i)perylene-$^{13}C_{12}$ generally has the highest correlation coefficients with 4,4'-dibromooctafluorobiphenyl the second choice.

For the acid compounds, 2,4-dimethylphenol has the highest correlation coefficient for six of the compounds, and phenol-d_6 has the highest coefficient for four of the compounds. 2-Fluorophenol has positive correlation coefficients (ranging from 0.07 to 0.38) with all of the acid compounds.

Further investigations of statistical approaches will be implemented and will be reported in a separate report at a later time.

REFERENCES

1. Outler, E. C. and McCreary, J. H., Interlaboratory Method Validation Study: Program Documentation, Battelle Columbus Laboratories, 1982.

2. Youden, W. J. Statistical Techniques for Collaborative Tests. Association of Official Analytical Chemists, Inc., Washington, D.C., 1969. 64 pp.

3. ASTM D2777-77, 1980 Annual Book of ASTM Standards, Part 31, pp. 16-28. American Society for Testing and Materials, Philadelphia, Pa.

4. ASTM #178-80, 1980 Annual Book of ASTM Standards Part 41, pp. 206-231, American Society for Testing and Materials, Philadelphia, Pa.

5. Youden, W. J. "Statistical Manual of the AOAC," The Association of Official Analytical Chemists, Washington, D.C., 1975.

6. Thompson, W. R. "On a Criterion for the Rejection of Observations and the Distribution of the Ratio of the Deviation to the Sample Standard Deviations." The Annals of Mathematical Statistics, AASTA 6 (1935) pp 214-219.

7. Britton, P. W., "Statistical Basis for Laboratory Performance Evaluation Limits." Presented at the 142nd Joint Statistical Meeting, Cincinnati, Ohio, August 17, 1982.

8. "Methods for Organic Chemical Analysis of Water and Wastes by GC, HPLC, and GC/MS." U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

9. Johnson, N. L. and Leone, F. C., "Statistics and Experimental Design," Volume I, 2nd ed., John Wiley & Sons, Inc., New York, 1977.

APPENDIX A

STUDY OF ONE SAMPLE FOR FALSE POSITIVES AND FALSE NEGATIVES

A small study was conducted on a very challenging sample to determine the extent of false positives and false negatives. The sample was supplied by Radian Corp. and contained a number of both priority pollutants and non-priority pollutants (not spiked). Table A-1 presents the results for the B/N and acid fractions. Although Full Method 625 analyses were conducted for the study, only compounds which were detected are presented. Table A-2 presents the summary statistics.

The statistical procedures used to summarize the data focused on simple summary statistics. The averages, standard deviations and coefficients of variation were computed using the detected values. Of the 24 compounds for which concentrations greater than 10 µg/L were reported, only bis(2-ethylhexyl) phthalate, di-n-butylphthalate, diethyl phthalate, dimethyl phthalate, phenol, 2-nitrophenol, 2,4-dinitrophenol and 4-nitrophenol were detected by at least half of the labs.

The results for the sample can be used to evaluate the potential for "false positives" and "false negatives" using Method 625. Table 13 shows the number of false positives and false negatives using the following definitions:

1) A compound is considered present in the sample if one-half or more of the laboratories (seven or more) quantified the compound at greater than 10 µg/L. (For these compounds there is potential for false negatives.)

2) A compound is considered not present in the sample if less than one-half of the laboratories reported the compound at greater than 10 µg/L. (For those compounds, there is potential for false positives.)

3) A reported value is only considered a false positive if it was reported at greater than 10 µg/L.

Using these definitions, only four B/N compounds and four acid compounds are present in the sample. For the four B/N compounds there are a total of five false negatives (9% of the possible results). There were 13 B/N compounds which were reported by less than half of the laboratories (but reported at >10 µg/L by at least one laboratory). For these 13 compounds, there were 23 false positives (13% of the possible results).

For the four acid compounds present in the sample, there are a total of six false negatives (11% of the possible results). Three of the acid compounds were reported by less than half of the laboratories (but reported at 10 µg/L by at least on laboratory). For these three compounds, there were three false positives (7% of the possible results).

TABLE A-1. FALSE POSITIVE AND FALSE NEGATIVE STUDY SAMPLE RESULTS

COMPOUND	LABORATORY														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ANTHRACENE	-	-	-	-	-	-	-	-	-	-	-	-		+	-
BENZYL BUTYL PHTHALATE	-	-	-	-	-	-	-	+	-	-	-	-		-	-
BIS(2-CHLOROETHOXY)METHANE	-	-	-	-	-	-	-	-	+	-	-	-		-	-
BIS(2-CHLOROETHYL)ETHER	+	+	+	-	-	-	-	+	+	-	-	-		-	-
BIS(2-CHLOROISOPROPYL)ETHER	-	-	-	-	-	+	-	-	-	-	-	-		-	-
BIS(2-ETHYLHEXYL)PHTHALATE	+	+	+	+	-	+	+	+	+	+	-	+		-	+
DI-N-BUTYLPHTHALATE	+	+	+	+	+	+	+	+	+	+	+	+		+	-
DI-N-OCTYLPHTHALATE	-	-	-	-	-	-	-	-	-	-		+		-	-
DIETHYL PHTHALATE	+	+	+	+	+	+	+	+	+	+	+	+		+	+
DIMETHYL PHTHALATE	+	+	+	+	+	+	+	+	+	+	-	+		+	+
HEXACHLOROETHANE	-	-	-	-	-	-	-	+	-	-	-	-		-	-
ISOPHORONE	+	-	-	-	-	+	+	-	-	-	-	-		+	-
N-NITROSODI-N-PROPYLAMINE	-	-	-	-	-	-	-	-	-	-	-	-		+	-
NAPHTHALENE	-	-	-	-	-	-	-	-	-	-	-	+		-	-
NITROBENZENE	+	-	-	-	-	+	-	+	-	-	-	-		+	-
PHENANTHRENE	-	-	-	-	-	-	-	-	-	-	-	+		-	-
2,6-DINITROTOLUENE	-	-	-	-	-	+	-	-	-	-	-	-		-	-
PENTACHLOROPHENOL	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-
PHENOL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2-METHYL-4,6-DINITROPHENOL	-	-	-	-	-	-	-	-	+	-	-	-	-	-	-
2-NITROPHENOL	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
2,4-DIMETHYLPHENOL	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-
2,4-DINITROPHENOL	+	+		+	+	+	+	-	+	+	+	+	+	+	+
4-NITROPHENOL	+	-	+	-	+	+	-	+	+	+	+	+	-	-	+

TABLE A-2. STATISTICAL SUMMARY OF THE FALSE POSITIVE AND FALSE NEGATIVE STUDY FOR THE B/N FRACTION

COMPOUND	NO. OF VALUES DETECTED	NO. OF VALUES NOT DETECTED	QUALITATIVE PERFORMANCE*	
			FALSE POSITIVES	FALSE NEGATIVES
ANTHRACENE	1	13	1	
BENZYL BUTYL PHTHALATE	1	13	1	
BIS(2-CHLOROETHOXY)METHANE	1	13	1	
BIS(2-CHLOROETHYL)ETHER	5	9	5	
BIS(2-CHLOROISOPROPYL)ETHER	1	13	1	
BIS(2-ETHYLHEXYL)PHTHALATE	11	3		3
DI-N-BUTYLPHTHALATE	13	1		1
DI-N-OCTYLPHTHALATE	1	13	1	
DIETHYL PHTHALATE	14	0		0
DIMETHYL PHTHALATE	13	1		1
HEXACHLOROETHANE	1	13	1	
ISOPHORONE	4	10	4	
N-NITROSODI-N-PROPYLAMINE	1	13	1	
NAPHTHALENE	1	13	1	
NITROBENZENE	4	10	4	
PHENANTHRENE	1	13	1	
2,6-DINITROTOLUENE	1	13	1	
PENTACHLOROPHENOL	1	14	1	
PHENOL	15	0		0
2-METHYL-4,6-DINITROPHENOL	1	14	1	
2-NITROPHENOL	15	0		0
2,4-DIMETHYLPHENOL	1	14	1	
2,4-DINITROPHENOL	13	1		1
4-NITROPHENOL	10	5		5

* IF MORE THAN HALF OF THE LABORATORIES QUANTITATED THE COMPOUND AT >10 UG/L, THEN THE COMPOUND IS CONSIDERED PRESENT IN THE SAMPLE (POTENTIAL FOR FALSE NEGATIVES). OTHERWISE THE COMPOUND IS NOT CONSIDERED PRESENT IN THE SAMPLE (POTENTIAL FOR FALSE POSITIVES).

APPENDIX B

RESULTS OF GC/MS FEASIBILITY STUDY

To prove the feasibility of the study, Radian analyzed the Youden pair ampules spiked into water using the procedures used by the participating laboratories. Figures B-1 and B-2 present the total ion scan for the 1-1 Youden pair B/N samples. Figure B-3 presents the total ion scan for the 1-1 Youden pair acid sample. Retention times for the sample scans and the masses used for both qualitative and quantitative analyses are given in Tables B-1 through B-3. As shown, the total ion scans provide little difficulty in interpretation with the exception of a number of pairs of polyaromatic hydrocarbon which coelute and have the same characteristic masses.

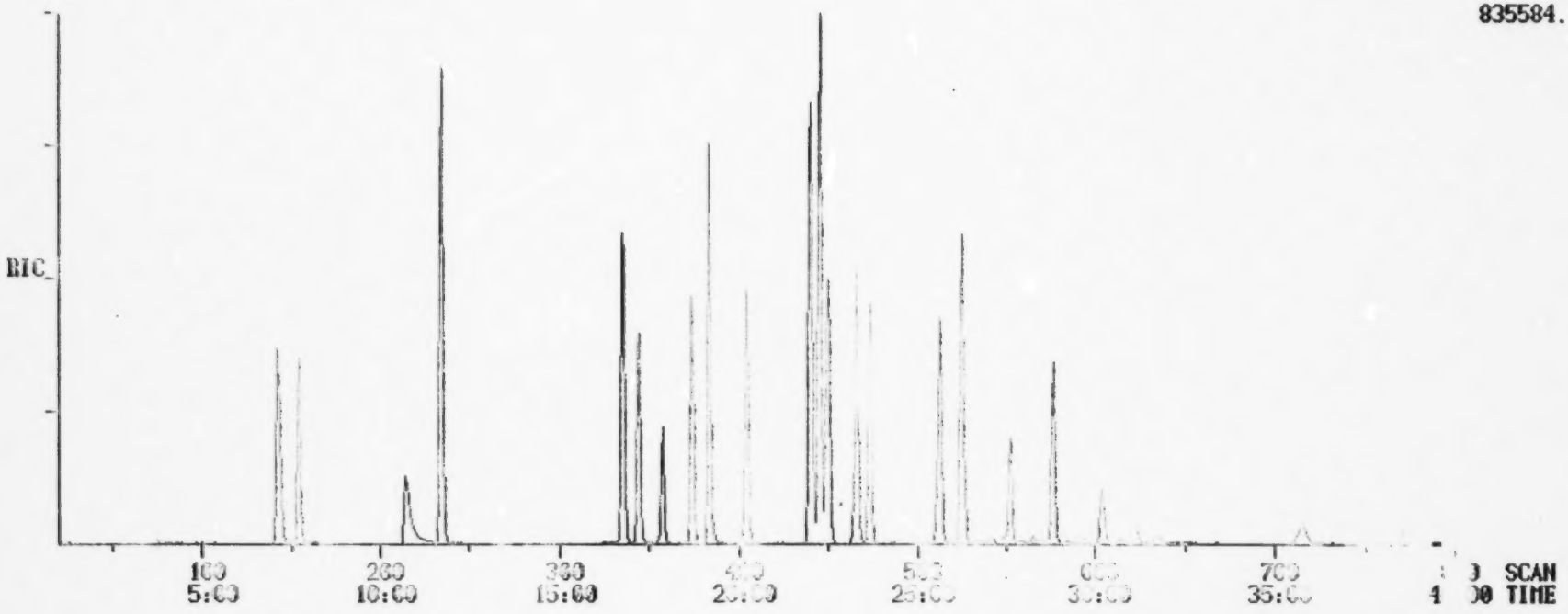

Figure B-1. Total Ion Scan of the 1-1 Youden Pair for the B/N Standard 1 Feasibility Sample

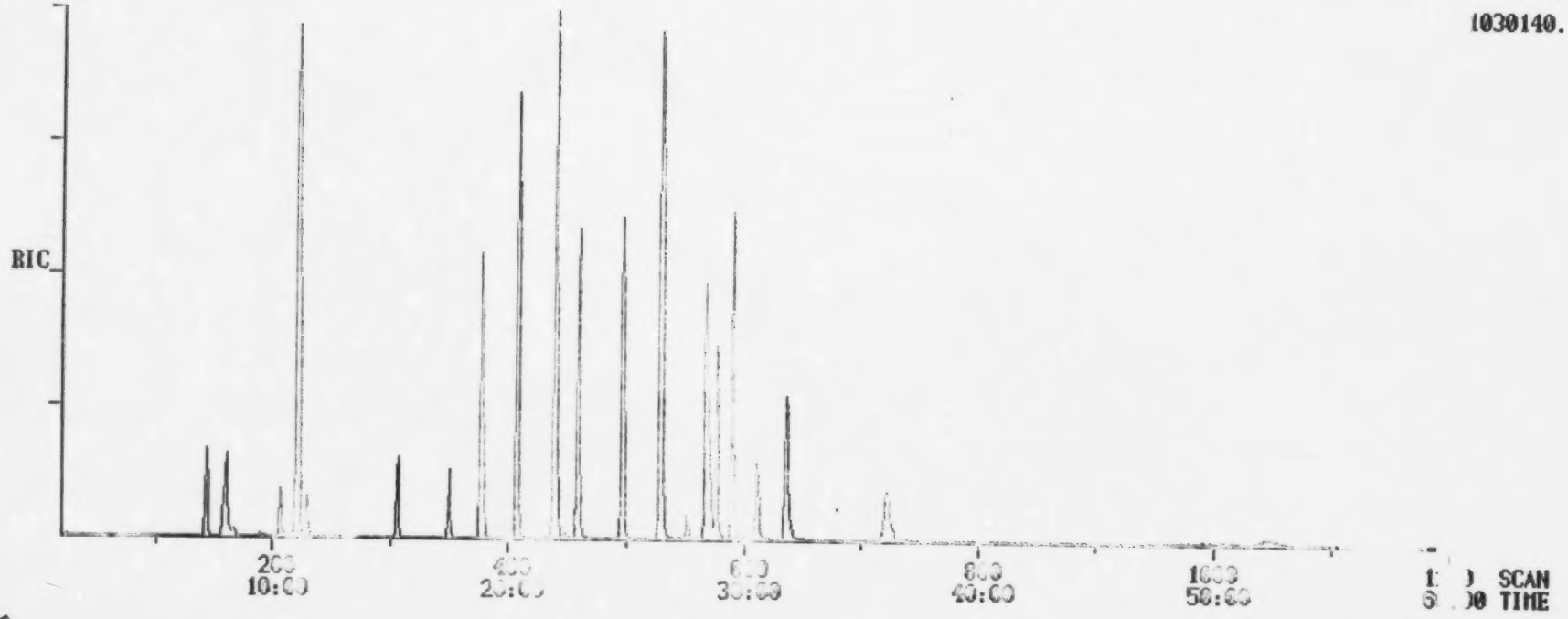

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Figure B-2. Total Ion Scan of the 1-1 Youden Pair for the B/N Standard 2 Feasibility Sample

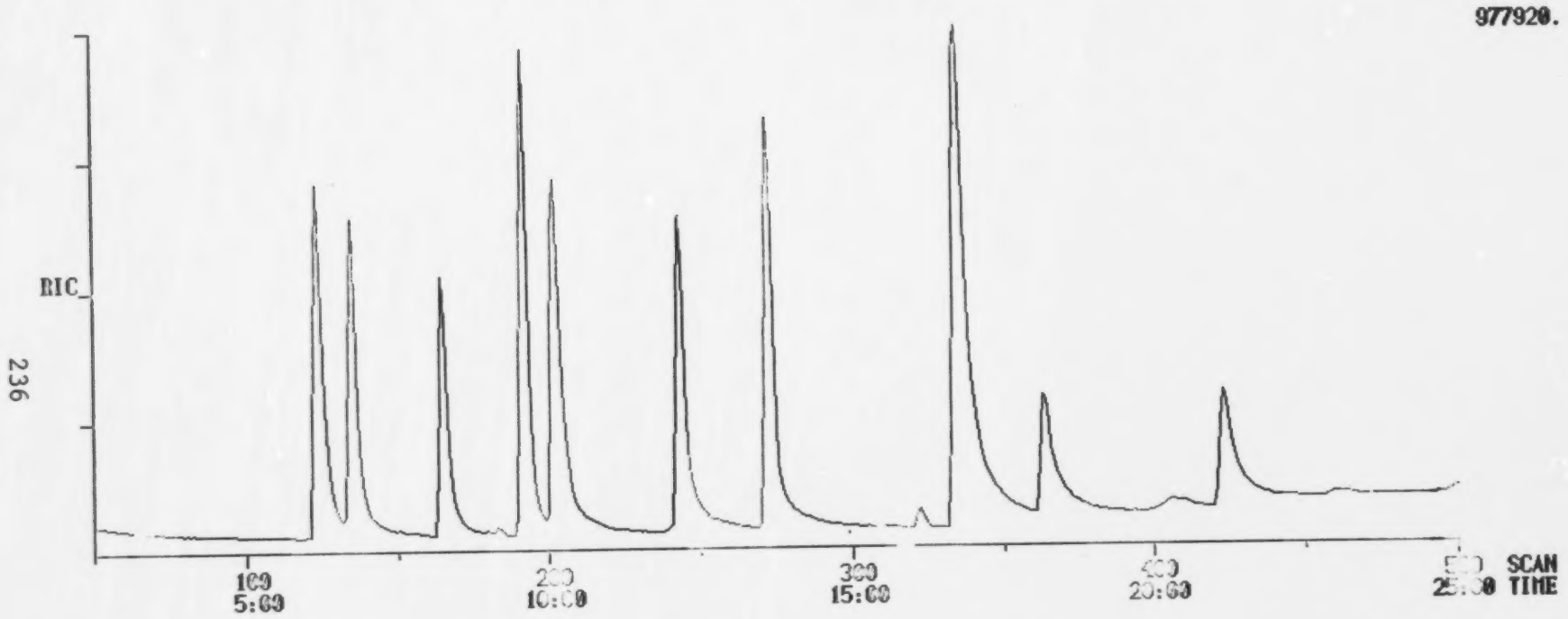

Figure B-3. Total Ion Scan of the 1-1 Youden Pair for the Acid Standard Feasibility Sample

TABLE B-1. RETENTION TIMES AND ANALYTICAL MASSES FOR B/N COMPOUNDS (1-1 YOUDIN PAIR B/N STANDARD 1 FEASIBILITY SAMPLE)

Compound	Retention Time	m/e
1,3-Dichlorobenzene	7:09	146 113 148
Bis(2-chloroethyl)ether	7:45	93 63 95
Isophorone	10:45	82 95 138
Naphthalene	11:45	128 127 129
Acenaphthylene	16:45	152 151 153
Acenaphthene	17:12	154 152 153
2,6-Dinitrotoluene	17:51	165 63 121
Phenanthrene/Anthracene	22:00	178 176 179
Chrysene/Benzo(a)anthracene	30:15	228 226 229
Fluoranthene	25:39	202 100 101
Di-n-butylphthalate	23:42	149 104 150

TABLE B-1. RETENTION TIMES AND ANALYTICAL MASSES FOR B/N COMPOUNDS (1-1 YOUDIN PAIR B/N STANDARD 1 FEASIBILITY SAMPLE), Continued

Compound	Retention Time	m/e
Hexachlorobenzene	20.15	284 142 249
Diethyl phthalate	19:12	149 150 177
4-Chlorophenylphenyl ether	18:42	204 141 206
3,3-Dichlorobenzidine	31:06	252 126 254
3,4-Benzofluoranthene/Benzo(k) fluoranthene	35:48	252 126 254
Benzo(a)pyrene	38:39	252 125 253
Dibenzo(a,h)anthracene	52:57	278 139 279
β-BHC	22:18	181
Heptachlor	22:30	100
Aldrin	23:18	66
Endosulfan sulfate	28:48	272
4,4'-DDD	27:39	235
4,4'-DDE	26:15	246

TABLE B-2. RETENTION TIMES AND ANALYTICAL MASSES FOR B/N COMPOUNDS (1-1 YOUDEN PAIR B/N STANDARD 2 FEASIBILITY SAMPLE)

Compound	Retention Time	m/e
1,4-Dichlorobenzene	7:12	146 113 148
1,2-Dichlorobenzene	7:54	146 113 148
Hexachloroethane	8:03	117 199 201
bis(2-Chloroisopropyl)ether	8:21	121 45 77
n-Nitrosodi-n-propylamine	9:30	130 42 101
Nitrobenzene	10:21	77 65 123
Hexachlorobutadiene	11:03	225 223 227
1,2,4-Trichlorobenzene	11:09	180 109 182
bis(2-Chloroethoxy)methane	11:30	93 95 123
2-Chloronaphthalene	15:18	162 127 164
Dimethyl phthalate	17:30	163 164 194

TABLE B-2. RETENTION TIMES AND ANALYTICAL MASSES FOR B/N COMPOUNDS (1-1 YOUDEN PAIR B/N STANDARD 2 FEASIBILITY SAMPLE), Continued

Compound	Retention Time	m/e
2,4-Dinitrotoluene	18:51	89 165 63 182
Fluorene	18:51	166 165 167
4-Bromophenylphenyl ether	20:24	248 141 250
Phenanthrene/Anthracene	22:00	178 176 179
Pyrene	26:30	202 100 101
Butylbenzyl phthalate	28:51	149 91
Bis(2-ethylhexyl)phthalate	29:30	149 167 279
Chrysene/Benzo(a)anthracene	30:33	228 226 229
Di-n-octyl phthalate	31:48	149 167
3,4-Benzofluoranthene/Benzo(k) fluoranthene	36:06	252 126 254
Indeno(1,2,3-c,d)pryene	52:18	276 138 277

TABLE B-2. RETENTION TIMES AND ANALYTICAL MASSES FOR B/N COMPOUNDS (1-1 YOUDEN PAIR B/N STANDARD 2 FEASIBILITY SAMPLE), Continued

Compound	Retention Time	m/e
Benzo(g,h,i)perylene	57:21	276 138 277
δ-BHC	22:57	181
Endrin aldehyde	28:33	67
4,4' DDT	28:24	235
Dieldrin	26:27	79
Heptachlor epoxide	24:51	81

TABLE B-3. RETENTION TIMES AND ANALYTICAL MASSES FOR ACIDIC COMPOUNDS (1-1 YOUDEN PAIR FEASIBILITY SAMPLE)

COMPOUND	Retention Time	m/e
2-Chlorophenol	6:12	128 64 130
2-Nitrophenol	6:45	139 65 109
Phenol	8:15	94 65 66
2,4-Dimethylphenol	9:36	122 107 121
2,4-Dichlorophenol	10:06	162 98 164
2,4,6-Trichlorophenol	12:09	196 198 200
p-Chloro-m-cresol	13:36	142 107 144
2,4-Dinitrophenol	16:42	184 63 154
4,6-Dinitro-o-cresol	16:45	198 77 182
Pentachlorophenol	18:09	266 264 268
4-Nitrophenol	21:09	139 65 109

APPENDIX C
METHOD 625 BASE/NEUTRAL COMPOUNDS

TABLE C-1

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ACENAPHTHENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	7.0	8.0	7.0	8.0	7.0	8.0	7.0	8.0
LAB NUMBER								
1	5.8	8.6	4.2	7.6	5.1	7.2	5.4	4.5
2	7.4	7.0	50.0*	8.2	7.1	9.3	7.0	7.6
3	6.7	8.3	6.1	6.3	4.3	5.7	5.2	5.7
4	8.7*	8.9*	6.7	10.0	8.2	9.6	8.3	9.2
5	41.5*	6.5	4.4*	5.2*	5.4	5.4	0.0*	*
6	6.1	8.1	7.2	6.9	4.5	3.4	6.7	6.1
7	7.4	7.4	7.2	8.5	7.1	7.7	6.8	7.8
8	7.7	7.1	9.3	8.1	3.8	6.4	8.2	9.6
9	9.4	7.2	12.6*	10.0*	9.1	10.8	7.5	10.7
10	7.2	7.8	6.3	8.6	7.5	8.4	5.9	7.2
11	3.6*	4.4*	4.7*	5.1*	4.4*	5.1*	4.4	5.0
12	8.3	7.7	7.2	8.2	8.4	7.6	7.3	8.0
13	0.0*	5.8	6.8	5.0	5.8	5.1	*	0.0*
14	6.6	7.1	6.0	6.8	6.5	6.9	4.9	9.0
15	0.0*	3.5*	5.1*	2.1*	18.5*	6.6	5.3	4.9

TABLE C-2

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ACENAPHTHENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	54.0	60.0	54.0	60.0	54.0	60.0	54.0	60.0
LAB NUMBER								
1	47.6	53.0	53.9	53.2	44.9	56.3	49.5	50.8
2	56.9	63.2	52.7	58.0	50.0	55.3	49.6	54.7
3	57.2	86.8	52.4	61.5	48.6	58.3	42.5	56.9
4	65.2*	65.7*	71.9	77.7	60.8	54.1	53.8	64.0
5	5.7*	44.0	43.5*	36.6*	36.4	38.8	78.7*	*
6	53.5	58.1	51.7	53.4	55.4	62.8	48.3	55.5
7	49.6	62.2	55.3	66.5	51.6	58.2	54.4	55.3
8	63.4	61.0	61.8	61.7	45.0	50.5	62.2	63.8
9	69.0	60.7	65.9*	103.0*	78.6	52.4	53.1	69.4
10	53.2	66.9	54.9	45.9	48.4	56.2	45.2	43.5
11	21.7*	28.5*	38.9*	43.7*	38.6*	41.6*	38.5	41.2
12	54.5	64.2	48.3	54.4	57.5	63.8	52.5	56.1
13	0.0*	0.0*	42.8	60.5	60.1	59.7	0.5*	20.9*
14	42.1	44.9	40.9	44.1	42.7	45.9	32.8	22.2
15	24.8*	20.6*	45.7*	17.9*	87.1	48.2	42.9	44.9

TABLE C-3

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ACENAPHTHENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	400.0	360.0	400.0	360.0	400.0	360.0	400.0	360.0
LAB NUMBER								
1	377.3	346.1	395.5	301.0	93.8	363.2	356.0	328.0
2	345.7	293.6	363.9	296.4	77.0	225.7	353.7	373.9
3	447.0	426.0	322.7	290.0	270.2	299.6	311.7	349.8
4	424.0*	456.0*	399.0	301.0	418.0	397.0	310.0	444.0
5	240.0	231.0	252.0*	160.0*	284.0	189.0	423.7*	293.7
6	444.2	341.7	353.1	375.0	418.5	392.8	344.6	286.1
7	299.0	321.0	335.0	336.0	321.0	320.0	323.0	298.0
8	369.6	473.9	488.6	473.6	385.8	327.3	333.3	480.7
9	556.0	393.0	730.0*	458.0*	599.0	455.0	567.0*	302.0
10	205.0	324.0	255.0	331.0	264.0	266.0	287.0	292.0
11	202.0*	146.0*	231.0*	235.0*	227.0*	222.0*	294.0	219.0
12	390.0	425.0	446.0	399.0	455.0	419.0	477.0*	345.0
13	386.6	232.7	352.8	93.0*	399.2	408.8	*	26.3*
14	320.9	269.1	328.5	271.6	300.8	267.8	304.9	212.9
15	67.7*	146.2*	263.3*	83.8*	251.2	707.0*	309.8	191.7

TABLE C-4

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ACENAPHTHYLENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	8.0	9.0	8.0	9.0	8.0	9.0	8.0	9.0
LAB NUMBER								
1	6.5	8.9	6.2	7.9	6.1	7.7	5.8	6.5
2	8.2	7.7	58.0*	10.1	8.6	11.7	8.4	9.4
3	20.7*	26.2*	17.9*	18.6*	10.9	15.1	19.7*	17.4*
4	6.4	7.6	5.7	9.0	5.8	6.8	5.9	7.2
5	52.3*	11.9	7.5	6.3	8.7	8.5	0.0*	*
6	6.0	7.6	7.9	6.2	4.1	3.0	6.7	6.0
7	7.7	9.6	8.9	9.7	8.6	7.6	7.7	8.5
8	28.6*	30.7*	36.3*	31.2*	15.5*	27.4*	33.8*	33.3*
9	23.9*	18.9*	23.6*	23.7*	20.3*	26.6*	16.8*	23.2*
10	7.3	7.6	6.3	8.0	8.1	8.7	6.7	7.7
11	4.5*	5.5*	6.0*	6.4*	5.4*	6.4*	5.4	6.2
12	9.3	8.2	7.2	8.4	9.3	7.9	7.5	7.0
13	0.0*	7.9	7.4	5.8	6.9	6.8	7.4	*
14	10.4	11.6	9.4	10.8	10.6	11.3	7.6	14.2*
15	0.0*	10.0	9.6	5.0	46.3*	11.9	10.5	9.3

TABLE C-5

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ACENAPHTHYLENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	61.0	68.0	61.0	68.0	61.0	68.0	61.0	68.0
LAB NUMBER								
1	50.8	56.8	58.1	57.4	48.7	61.0	51.7	54.1
2	64.1	71.2	60.8	65.2	60.4	66.5	62.3	69.2
3	179.0*	271.2*	161.3*	182.6*	146.9*	182.0*	91.8*	195.5*
4	50.8	65.3	71.9	83.2	64.8	61.7	64.1	70.8
5	6.9	85.7	55.4	64.5	63.1	79.3	9.2*	*
6	53.4	56.7	52.8	53.6	57.2	66.1	50.5	58.7
7	61.5	64.6	66.1	73.5	51.2	68.8	63.6	63.8
8	238.1*	231.5*	244.8*	246.3*	174.0*	201.4*	231.8*	230.1*
9	166.0*	155.0*	158.0*	200.0*	197.0*	121.0*	121.0*	162.0*
10	58.0	74.0	63.6	51.7	54.7	64.8	51.5	51.5
11	26.8*	35.0*	46.3*	52.6*	46.3*	50.0*	46.0	49.3
12	66.5	75.0	54.9	61.7	67.8	75.8	61.1	63.0
13	18.2	0.0*	46.7	74.7	62.3	67.9	20.6	20.6
14	67.6	70.9	66.1	71.0	66.3	73.3	52.6	33.6
15	69.7	47.5	93.8*	42.8	202.0*	104.7*	92.4	90.4

TABLE C-6

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ACENAPHTHYLENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	450.0	405.0	450.0	405.0	450.0	405.0	450.0	405.0
LAB NUMBER								
1	396.4	367.7	408.4	325.0	105.0	366.3	381.0	353.0
2	396.4	344.8	446.6	350.2	479.9	280.8	439.7	453.0
3	1074.0*	1056.0*	812.0*	930.7*	829.2	980.4*	903.0*	916.0*
4	489.0	512.0	436.0	302.0	504.0	461.0	392.0	399.0
5	300.0	289.0	306.0	201.0	367.0	252.0	448.6*	296.6*
6	454.2	320.8	318.9	375.6	438.7	399.8	307.3	319.5
7	329.0	300.0	345.0	326.0	337.0	281.0	332.0	313.0
8	1336.2*	1402.6*	161.8	1572.5*	1278.1*	982.5*	1061.8*	1511.7*
9	1360.0*	1100.0*	1470.0*	1110.0*	1690.0*	1180.0*	1290.0*	707.0*
10	228.0	349.0	300.0	349.0	308.0	309.0	334.0	354.0
11	253.0*	190.0*	276.0*	281.0*	274.0*	265.0*	347.0	259.0
12	462.0	503.0	526.0	468.0	554.0	501.0	553.0	396.0
13	448.4	374.8	394.6	115.7	459.7	493.9	*	47.9*
14	484.1	411.5	495.5	415.6	458.3	408.8	461.4	346.1
15	190.1	347.7	402.5	192.5	404.9	1810.3*	501.1	281.5

TABLE C-7

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ALDRIN ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	11.0	12.0	11.0	12.0	11.0	12.0	11.0	12.0
LAB NUMBER								
1	8.0	8.3	5.1	8.3	5.8	6.4	6.6	7.4
2	12.0	10.0	9.0	13.0	10.0	12.0	10.0	9.0
3	4.5	4.6	2.6*	2.8*	3.2*	2.7*	0.0*	0.0*
4	8.7	9.1	5.5	6.6	5.3	6.7	3.1	4.2
5	98.1*	24.0	8.8	14.2	10.9	9.2	5.8	*
6	7.4	8.8	8.1	11.5	5.2	8.5	0.7	0.0*
7	5.4	5.5	4.7	6.8	3.8	4.9	6.2	2.4
8	181.9*	259.0*	236.1*	142.0*	80.6*	140.4*	14.5*	214.6*
9	17.7	13.3	9.8*	14.2*	16.5*	12.9*	7.4	14.5
10	8.3	6.6	7.1	7.8	7.0	7.9	4.5	7.9
11	0.0*	0.0*	6.5	0.0*	0.0*	0.0*	0.0*	0.0*
12	20.1	22.4	11.5	18.4	18.2*	13.2	11.0	19.8
13	0.0*	6.5	4.5*	3.0*	3.7	4.2	*	*
14	9.8	11.3	6.8	9.6	9.0	8.3	3.7	4.8
15	0.9*	3.3*	6.1	3.3	0.0*	6.0	3.7	3.9

TABLE C-8

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ALDRIN ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	81.0	90.0	81.0	90.0	81.0	90.0	81.0	90.0
LAB NUMBER								
1	72.3	58.3	37.4	42.7	48.5	45.9	53.5	65.6
2	74.0	82.0	107.0	64.0	62.0	66.0	59.0	56.0
3	10.6	41.1	7.3*	8.9*	8.5*	12.9*	7.9*	8.5*
4	54.5	49.6	14.5	17.7	16.5	14.2	11.2	13.5
5	13.6	129.0	86.8	50.7	48.4	70.9	81.2	*
6	104.9	91.6	84.7	108.4	33.6	97.8	18.0	13.9
7	45.1	56.6	36.6	58.3	44.2	23.7	48.5	20.1
8	1436.8*	2021.2*	65.2*	751.2*	51.4*	53.4*	58.1*	371.3*
9	111.0	86.0	97.9*	66.0*	78.6*	84.0*	22.8	81.2
10	54.5	57.8	45.7	49.4	42.2	50.2	40.5	33.2
11	11.6*	0.0*	32.1	35.7	37.9	40.1	35.1	46.9
12	99.2	122.0	61.1	90.8	76.4	111.0	103.0	79.6
13	0.0*	0.0*	21.6*	26.1*	23.8	24.9	27.2	24.6
14	78.9	78.0	57.9	54.9	55.2	51.1	38.8	13.1
15	24.8*	33.3*	54.3	21.9	12.3	23.8	11.7	27.7

TABLE C-9

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ALDRIN ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	600.0	540.0	600.0	540.0	600.0	540.0	600.0	540.0
LAB NUMBER								
1	549.7	449.9	563.4	437.0	114.0	504.8	570.0	377.0
2	432.0	374.0	362.0	373.0	360.0	266.0	408.0	368.0
3	272.5	176.4	79.2*	58.7*	71.9*	72.3*	175.9*	99.2*
4	197.0	293.0	117.0	75.6	89.4	112.0	35.9	84.4
5	600.0	567.0	668.0	331.0	572.0	498.0	625.0	468.0
6	656.0	719.7	751.0	575.0	326.0	673.3	260.0	180.4
7	399.0	385.0	373.0	365.0	326.0	331.0	279.0	313.0
8	13497.0*	10482.0*	11056.0*	6546.1*	8376.9*	7030.3*	7160.0*	7519.4*
9	876.0	610.0	804.0*	655.0*	827.0*	739.0*	805.0	294.0
10	214.0	279.0	266.0	248.0	236.0	258.0	275.0	264.0
11	187.0*	89.0*	324.0	335.0	230.0	269.0	529.0	335.0
12	395.0	381.0	371.0	350.0	434.0	346.0	334.0	354.0
13	232.0	206.7	244.4*	71.1*	243.3	239.9	*	40.8
14	510.6	420.9	524.3	439.2	470.2	443.8	430.5	106.0
15	106.8*	167.3*	509.2	154.7	148.7	117.3	190.2	108.5

TABLE C-10

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ANTHRACENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
LAB NUMBER								
1	4.4	5.8	2.6	5.0	4.2	4.7	4.5	6.4
2	5.7	5.1	226.0*	6.1	4.7	6.8	5.5	6.4
3	3.4	5.5	2.9*	C.0*	0.C*	3.3*	1.5*	C.0*
4	4.3	4.6	3.9	4.2	3.9	5.0	5.5	4.5
5	69.8*	5.3	3.7	3.5	0.0*	4.3*	3.9	16.1*
6	4.3	4.6	5.0	5.2	3.1	4.5	1.5	1.7
7	4.6	5.0	4.2	5.1	4.7	5.2	5.6	4.2
8	5.0	4.5	5.3	5.1	2.8	3.9	6.3	4.8
9	6.3	5.0	5.5	5.5	5.8	6.4	5.2	6.8
10	5.3	4.7	5.2	5.9	5.6	6.0	5.8	6.4
11	3.2*	4.2*	4.1	4.5	4.4	5.1	4.1	4.6
12	6.2	5.9	5.4	5.9	6.3	5.7	5.5	5.2
13	0.0*	7.7*	6.0	5.1	4.0	5.3	95.7*	8.2
14	22.0*	24.8*	27.1*	39.8*	47.7*	56.2*	31.3*	58.3*
15	0.4*	2.2*	3.4*	1.9*	7.2	4.2	2.8	3.2

TABLE C-11

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ANTHRACENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	90.0	81.0	90.0	81.0	90.0	81.0	90.0	81.0
LAB NUMBER								
1	80.3	71.1	83.4	70.1	75.1	73.8	75.9	73.6
2	88.0	78.8	82.8	73.4	79.3	69.9	87.2	78.2
3	62.9	72.9	50.7*	51.2*	53.6*	48.2*	25.3*	28.6*
4	77.3	73.1	84.8	84.5	70.5	66.0	80.6	65.6
5	4.1	64.4	67.4	55.4	61.3*	53.9*	72.2	43.8
6	82.2	66.0	79.4	72.2	77.0	83.0	55.7	51.7
7	76.5	73.3	76.0	74.6	77.1	66.1	77.2	47.8
8	81.4	68.8	83.1	72.5	63.9	57.6	76.4	59.1
9	96.1	78.5	95.5	94.4	112.0	68.2	75.8	85.6
10	94.0	98.0*	96.3	66.4	96.6	81.0	89.6	70.8
11	35.7*	37.8*	71.9	64.7	69.5	61.3	73.6	63.8
12	82.2	80.8	75.4	64.3	89.6	78.1	77.1	65.4
13	22.5	0.0*	70.7	76.8	78.9	78.9	135.4*	41.5
14	636.7*	678.3*	786.3*	630.7*	803.7*	704.2*	620.9*	328.8*
15	37.2*	37.7*	74.4*	28.9*	88.9	67.4	63.7	64.4

TABLE C-12

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ANTHRACENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	540.0	600.0	540.0	600.0	540.0	600.0	540.0	600.0
LAB NUMBER								
1	515.1	569.9	514.5	470.0	131.0	553.8	511.0	532.0
2	423.5	449.1	471.7	455.0	428.6	356.6	473.7	520.2
3	252.9	291.0	153.2*	154.0*	129.7*	166.9*	219.7*	209.4*
4	438.0	636.0	343.0	292.0	336.0	425.0	252.0	327.0
5	200.0	375.0	318.0	0.0*	0.0*	300.0*	609.0	444.0
6	528.8	461.4	418.3	523.8	347.2	568.5	283.6	294.5
7	324.0	355.0	313.0	337.0	314.0	342.0	302.0	314.0
8	374.7	445.4	466.1	458.9	364.9	341.6	286.6	474.8
9	681.0	635.0	749.0*	658.0	705.0	703.0	684.0	442.0
10	278.0	580.0	438.0	632.0	404.0	602.0	495.0	578.0
11	222.0*	142.0*	288.0	340.0	255.0	309.0	392.0	314.0
12	440.0	558.0	481.0	486.0	510.0	536.0	524.0	461.0
13	474.5	362.3	499.7	191.0	521.7	617.5	*	5.6
14	3781.0*	6188.7*	6039.2*	4461.7*	5427.6*	5986.6*	5484.1*	4050.7*
15	71.8*	110.8*	245.1*	114.0*	204.6	456.8	235.4	140.3

TABLE C-13

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR B-BHC ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0
LAB NUMBER								
1	9.5	12.6	6.5	12.7	9.3	10.6	10.9	8.7
2	14.0	12.0	10.0	12.0	12.0	14.0	9.0	12.0
3	11.4	16.6	9.3	9.5	6.2	7.6	5.7	6.8
4	12.0	9.4	9.8	11.7	11.0	11.4	10.3	11.5
5	110.0*	12.1	9.5	15.6	11.0	0.0*	8.6	*
6	0.0*	10.9	18.1*	12.6*	11.4	9.4	15.6	12.3
7	11.5	13.2	10.4	13.8	12.9	13.2	30.7*	15.3
8	12.0	11.4	12.0	11.5	6.1	9.8	12.0	13.5
9	16.1*	14.5*	16.9*	17.0*	15.6*	19.1*	14.1*	18.0*
10	10.6	9.3	9.3	11.5	10.5	11.4	8.7*	10.2*
11	8.2	11.9	10.6	11.6	13.5	14.4	10.7	13.8
12	12.8	13.5	10.5	12.2	13.0	11.9	10.8	12.6
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	11.8	12.8	8.8	12.4	11.8	12.9	10.0	14.2
15	3.5*	11.5	14.4	13.5	38.9*	15.5*	11.1	11.7

TABLE C-14

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR B-BHC ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	101.0	112.0	101.0	112.0	101.0	112.0	101.0	112.0
LAB NUMBER								
1	95.1	109.7	101.0	95.7	94.3	109.0	93.5	104.0
2	88.0	97.0	84.0	89.0	76.0	89.0	86.0	92.0
3	93.7	132.1	78.3	93.1	80.7	87.3	66.8	82.1
4	78.1	85.4	81.0	85.7	85.7	88.7	62.4	60.4
5	16.3*	79.6	127.0	71.7	63.9	71.7	52.5	34.9
6	89.9	85.9	104.0*	160.5*	119.2	162.8*	109.0	122.0
7	97.5	109.0	90.9	115.0	95.4	104.0	123.0	109.0
8	96.7	93.9	79.8	92.8	70.9	79.5	96.1	68.4
9	109.0*	108.0*	116.0*	151.0*	132.0*	96.5*	94.6*	134.0*
10	78.1	79.8	65.7	67.6	64.9	73.5	58.6*	62.8*
11	56.0	60.9	88.4	97.6	98.9	114.0	95.0	111.0
12	86.1	103.0	72.8	84.9	84.4	106.0	84.1	86.3
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*
14	96.6	103.6	93.2	102.5	97.0	104.2	73.9	50.1
15	73.8	149.4	106.5	104.6	412.7*	116.6*	95.0	114.3

TABLE C-15

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (9) **

RAW DATA FOR B-BHC ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	750.0	675.0	750.0	675.0	750.0	675.0	750.0	675.0
LAB NUMBER								
1	741.1	702.8	749.4	531.0	188.0	678.4	721.0	654.0
2	508.0	453.0	482.0	440.0	496.0	330.0	576.0	506.0
3	1056.8	1001.8	681.6	652.9	509.0	664.3	804.9	704.6
4	348.0	499.0	341.0	270.0	460.0	528.0	289.0	425.0
5	670.0	633.0	747.0	369.0	630.0	520.0	642.0	468.0
6	695.0	1292.9	1465.4*	791.0*	928.2	1621.3*	750.0	718.8
7	595.0	560.0	544.0	586.0	621.0	563.0	618.0	589.0
8	642.1	831.5	569.5	527.0	607.0	531.5	430.4	796.6
9	872.0*	690.0*	1100.0*	728.0*	1030.0*	802.0*	900.0*	606.0*
10	257.0	408.0	354.0	350.0	313.0	330.0	358.0*	363.0*
11	448.0	312.0	423.0	450.0	482.0	488.0	608.0	405.0
12	597.0	624.0	626.0	478.0	712.0	606.0	605.0	520.0
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	732.9	609.8	744.2	611.0	692.1	611.5	703.3	540.7
15	350.6	505.5	754.8	732.1	768.5*	3171.7*	840.1	566.9

TABLE C-16

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BENZO(A)ANTHRACENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	20.0	18.0	20.0	18.0	20.0	18.0	20.0	18.0
LAB NUMBER								
1	17.7	0.9*	17.7	15.7	18.5	14.6	14.7	20.8
2	23.0	17.0	37.0	18.4	5.7	5.6	17.8	14.7
3	10.1*	7.8*	5.1*	0.0*	5.5*	5.2*	1.6*	0.0*
4	22.1	12.6	9.4*	8.7*	9.7*	3.1*	6.7	5.7
5	49.3*	14.2	11.2	11.2	13.7	11.6	*	4.5
6	17.8	15.4	13.9	23.6	13.9	18.6	4.9	3.7
7	12.5	10.4	9.7	10.5	9.9	8.9	14.6	2.0
8	18.2	22.1	10.3	21.8	8.3	10.1	12.5	11.5
9	17.0	12.3	16.9	13.8	18.2	14.2	13.0	14.1
10	19.7	12.0	11.4	21.3	14.9	12.7	16.9	16.6
11	10.2*	8.8*	16.0	12.8	18.3	12.0	13.9	15.8
12	19.3	16.7	18.1	16.3	18.2	15.9	17.9*	15.6*
13	10.0	13.1	25.7	12.4	15.2	16.6	6.3	9.0
14	30.3*	30.8*	25.8*	27.8*	32.5*	27.7*	20.0	20.3
15	4.2*	7.3*	33.4	4.8	21.2	9.9	7.2	8.0

TABLE C-17

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BENZO(A)ANTHRACENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	59.0	55.0	59.0	55.0	59.0	55.0	59.0	55.0
LAB NUMBER								
1	55.1	50.6	36.7	41.4	52.0	49.9	43.1	52.2
2	57.0	56.0	53.0	50.9	37.2	32.7	44.9	38.8
3	7.6*	20.1*	6.0*	5.8*	7.1*	8.1*	6.6*	7.6*
4	74.0	45.2	15.5*	15.6*	7.0*	11.3*	12.3	9.5
5	16.2	40.9	40.5	25.1	0.4*	3.7	21.9	14.1
6	65.8	52.9	48.9	61.2	26.8	62.2	12.4	12.0
7	31.3	36.7	26.8	35.7	34.3	17.6	42.2	11.8
8	55.3	68.0	28.7	64.4	32.1	26.8	38.5	26.8
9	46.2	42.5	45.8	45.0	37.8	35.9	19.8	41.5
10	59.6	65.8	57.7	47.6	56.4	48.4	48.0	44.5
11	9.4*	10.6*	28.8	33.2	40.3	34.7	37.8	33.1
12	56.1	53.9	49.9	41.9	45.0	46.4	52.2*	52.3*
13	19.4	0.0*	46.7	34.9	53.0	38.2	24.8	11.9
14	101.8*	90.9*	82.0*	64.5*	76.8*	66.3*	64.2	24.1
15	18.5*	25.9*	90.0*	15.5	36.7	17.4	10.5	21.3

TABLE C-18

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BENZO(A)ANTHRACENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	400.0	360.0	400.0	360.0	400.0	360.0	400.0	360.0
LAB NUMBER								
1	402.8	374.2	371.3	338.0	114.0	321.9	435.0	270.0
2	336.8	304.8	360.5	281.0	303.4	223.9	366.0	323.1
3	116.3*	89.1*	48.4*	36.7*	35.7*	47.6*	131.3*	90.7*
4	375.0	288.0	175.0*	131.0*	78.2*	45.7*	50.9	68.2
5	250.0	229.0	242.0	161.0	280.0	211.0	374.0	237.0
6	407.0	428.6	473.8	344.0	174.0	447.9	160.0	112.1
7	274.0	292.0	286.0	257.0	261.0	249.0	209.0	272.0
8	635.1*	548.5	340.4	674.9*	293.7	264.0	219.7	340.7
9	346.0	280.0	510.0	301.0	394.0	323.0	378.0	210.0
10	232.0	344.0	381.0	438.0	274.0	498.0	347.0	523.0
11	163.0*	64.5*	293.0	310.0	195.0	241.0	422.0	286.0
12	321.0	361.0	365.0	337.0	374.0	339.0	429.0*	306.0*
13	304.4	242.3	426.3	212.3	366.2	343.1	*	101.2
14	665.8*	569.2*	664.0*	536.0*	597.3*	550.1*	577.1	177.8
15	91.0*	89.8*	431.9	101.4	133.7	113.5	179.5	48.5

TABLE C-19

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BENZO(A)PYRENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
LAB NUMBER								
1	4.2	4.3	2.1	4.8	3.9	3.5	2.4	3.4
2	11.6	8.6	51.0*	6.1	6.1	5.4	6.0	6.9
3	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
4	14.5*	9.2*	4.3	3.1	2.4*	0.0*	1.8	4.0
5	60.7*	5.9	3.7	3.3	4.4	3.6	*	8.6*
6	0.0*	0.0*	0.0*	26.0*	0.0*	0.0*	0.0*	0.0*
7	1.2	1.4	1.1	0.7	1.0	1.2	1.9	1.0
8	1.8	5.1	0.0*	1.3	1.1	1.6	0.9	4.5
9	6.4	5.1	4.1	4.6	6.0*	4.3*	4.0	3.6
10	5.6	5.0	2.8	8.1	5.0	6.1	7.2*	8.5*
11	0.0*	0.0*	0.0*	0.0*	1.9	1.6	1.2	2.0
12	6.9	6.5	5.0	6.4	5.2	5.9	5.5	4.1
13	0.0*	2.6	3.0	1.9	1.5	4.4	*	*
14	3.9	7.3	1.9	2.6	0.8	3.0	1.2	1.5
15	0.3	2.3	12.7*	2.2	10.8	2.0	0.7	0.9

TABLE C-20

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BENZO(A)PYRENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	90.0	81.0	90.0	81.0	90.0	81.0	90.0	81.0
LAB NUMBER								
1	93.9	68.1	36.7	33.8	73.4	57.7	55.5	56.6
2	98.1	95.9	95.8	74.4	65.9	52.6	70.8	57.3
3	0.0*	26.2*	2.9*	2.3*	5.3*	5.6*	10.1*	9.2*
4	121.0*	108.0*	7.0	18.9	3.7*	9.6*	8.4	5.5
5	3.5	80.3	62.0	39.7	59.3	72.5	119.0*	145.0*
6	120.6	74.9	59.8	93.6	24.9	85.0	11.9	0.0*
7	64.5	53.9	40.3	65.0	83.3	20.6	80.8	20.4
8	74.0	74.8	22.7	38.0	24.9	30.0	24.1	29.0
9	94.8	90.3	101.0	81.6	85.8*	72.0*	33.9	75.8
10	65.0	132.0	79.5	99.0	103.0	61.0	85.5*	67.1*
11	4.8*	4.1*	12.9*	15.9*	25.1	20.4	21.1	14.9
12	98.8	85.6	83.8	62.8	64.0	65.0	93.7	86.9
13	48.7	0.0*	40.8	30.1	54.2	38.3	16.8	27.5
14	100.3	78.8	67.1	48.9	52.9	*	54.0	13.2
15	28.7	14.3	155.7	24.0	31.6	11.8	5.2	19.4

TABLE C-21

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BENZO(A)PYRENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	540.0	600.0	540.0	600.0	540.0	600.0	540.0	600.0
LAB NUMBER								
1	618.3	664.4	551.9	495.0	164.0	613.3	586.0	451.0
2	488.4	533.3	549.7	452.2	482.8	398.6	538.2	602.4
3	171.1*	160.2*	52.1*	58.0*	54.0*	87.8*	155.9*	161.5*
4	626.0*	610.0*	404.0	259.0	96.4*	18.5*	61.4	139.0
5	282.0	440.0	377.0	320.0	493.0	341.0	669.0*	442.0*
6	550.0	705.0	488.2	521.0	255.0	658.6	221.0	185.7
7	584.0	594.0	509.0	654.0	498.0	869.0	448.0	623.0
8	595.5	723.2	342.2	520.3	332.5	407.0	236.3	340.4
9	654.0	645.0	1010.0*	770.0	887.0*	738.0*	728.0	545.0
10	423.0	378.0	695.0	610.0	380.0	900.0	680.0*	1010.0*
11	119.0*	50.1*	206.0*	274.0*	126.0	211.0	308.0	256.0
12	496.0	674.0	585.0	624.0	578.0	631.0	691.0	566.0
13	429.7	419.8	402.1	360.6	451.9	515.0	*	70.0
14	505.0	527.5	511.7	499.2	447.8	514.9	486.8	142.4
15	42.9*	158.9	593.1	289.4	188.0	122.3	365.6	51.1

TABLE C-22

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BENZO(B)FLUORANTHENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	11.0	12.0	11.0	12.0	11.0	12.0	11.0	12.0
LAB NUMBER								
1	9.4	8.5	5.1	9.7	8.6	7.4	6.3	7.1
2	16.4	11.4	65.0*	13.0	0.6	0.8	12.7	10.6
3	2.6*	2.6*	0.8*	0.0*	1.2*	1.6*	0.7	0.6
4	13.8	8.9	4.1	2.4	4.5*	0.0*	3.2	8.7
5	61.9*	12.1	7.9	7.5	10.4	7.7	0.0*	6.2
6	9.4	7.6	0.0*	27.4*	0.0*	11.7	0.0*	0.0*
7	4.4	6.3	3.7	5.6	3.5	4.1	6.4	2.1
8	2.9	4.1	1.5	2.4	1.5	2.3	1.4	5.1
9	10.9	9.0	5.6	8.0	9.8	7.5	5.4	7.2
10	7.2	7.3	9.2*	15.3*	7.1	6.9	5.8	10.3
11	2.4*	3.1*	3.9	2.8	7.1	5.1	4.8	7.2
12	10.9	0.0*	10.6	10.7	9.7	9.8	11.2	11.4
13	4.7	8.8	10.0	7.1	5.8	12.1	8.9	*
14	10.5	13.5	2.2	18.5	3.6	3.6	2.3	6.8
15	9.4	3.5	21.7*	2.9	23.1*	4.2	1.6	3.0

TABLE C-23

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BENZO(B)FLUORANTHENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	81.0	90.0	81.0	90.0	81.0	90.0	81.0	90.0
LAB NUMBER								
1	75.4	67.6	33.6	38.1	60.6	62.3	46.6	62.8
2	86.9	105.6	87.4	84.0	53.8	51.8	62.2	61.6
3	5.8*	31.7*	4.0*	4.2*	5.7*	7.8*	9.9	11.5
4	115.0	122.0	5.7	11.2	4.1*	10.9*	9.8	5.3
5	8.7	83.5	55.8	43.7	52.5	76.8	67.5	96.0
6	97.3	76.6	55.6	90.8	22.1	92.9	0.0*	10.8*
7	58.3	63.1	40.6	68.9	54.9	23.7	65.2	19.8
8	31.2	42.5	16.1	26.5	15.3	21.0	11.5	13.2
9	81.3	81.9	69.0	63.0	55.6	68.0	21.3	63.3
10	95.7	125.0	92.0*	109.0*	81.1	65.5	63.4	60.4
11	7.6*	7.9*	18.8	28.3	35.1	36.4	28.6	28.0
12	80.0	87.4	68.3	64.2	37.9	66.9	75.2	89.4
13	58.4	0.0*	54.6	47.4	77.8	57.3	21.5	55.4
14	109.6	91.4	132.1	28.4	30.2	27.2	49.0	8.5
15	18.4	299.1*	98.7	19.8	31.1	12.8	5.0	23.7

TABLE C-24

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BENZO(B)FLUORANTHENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	600.0	540.0	600.0	540.0	600.0	540.0	600.0	540.0
LAB NUMBER								
1	630.9	525.6	562.5	439.0	170.0	494.8	585.0	355.0
2	516.5	465.9	581.9	405.6	470.4	349.3	565.1	499.5
3	203.6*	158.2*	68.9*	60.2*	67.2*	84.9*	190.8	162.8
4	690.0	579.0	318.0	188.0	133.0*	28.2*	73.6	119.0
5	284.0	374.0	399.0	242.0	454.0	303.0	698.0	384.0
6	578.0	605.2	652.2	487.0	253.0	643.8	224.0*	166.3*
7	594.0	510.0	567.0	509.0	510.0	523.0	399.0	539.0
8	327.9	416.0	276.7	347.3	272.2	244.0	144.4	194.4
9	704.0	456.0	755.0	518.0	660.0	578.0	653.0	360.0
10	397.0	536.0	681.0*	683.0*	375.0	690.0	561.0	696.0
11	179.0*	65.6*	290.0	331.0	188.0	253.0	442.0	295.0
12	448.0	509.0	504.0	465.0	512.0	477.0	260.0	432.0
13	593.1	507.9	639.7	542.8	598.4	614.1	*	102.9
14	826.4	400.0	1421.0*	269.2	303.9	293.9	439.3	71.5
15	702.7	87.0*	410.5	130.8	142.6	281.7	276.3	38.3

TABLE C-25

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BIS(2-CHLOROETHYL)ETHER ANALYSIS BY WATER TYP
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0
LAB NUMBER								
1	8.8	11.4	7.5	11.6	7.0	9.6	6.2	6.5
2	0.0*	0.0*	189.0*	18.0*	0.0*	0.0*	0.0*	0.0*
3	10.3	0.0*	7.0	0.0*	0.0*	3.1*	17.0	9.7
4	14.2	35.2*	19.0	14.8	13.5	9.5	8.0	19.6
5	85.7*	18.9	14.7	10.7	16.8	16.2	16.4	*
6	0.0*	12.1	0.0*	0.0*	11.3	0.0*	14.2	0.0*
7	10.2	9.3	2.7	11.4	8.0	10.3	12.8	10.0
8	8.9	10.0	0.0*	7.6	3.8	8.6	12.0	8.8
9	14.6	10.2	13.7*	19.9*	12.1	15.1	10.0	23.6
10	12.6	4.5	5.3	8.4	10.2	8.0	8.2	11.6
11	0.0*	0.0*	0.0*	0.0*	25.3	0.0*	0.0*	24.1
12	17.4*	13.7*	10.5	15.7	17.1	14.5	10.9	19.9
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	12.3	13.7	9.7	12.5	8.7	10.5	11.2	10.9
15	0.0*	0.8	10.2	2.5	67.7*	24.5*	12.3	2.3

TABLE C-26

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BIS(2-CHLOROETHYL)ETHER ANALYSIS BY WATER TYP
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	101.0	112.0	101.0	112.0	101.0	112.0	101.0	112.0
LAB NUMBER								
1	57.0	81.7	79.8	103.0	75.9	87.5	64.5	67.6
2	117.5	119.8	121.8*	134.6*	90.0	94.0	114.1	141.4
3	76.1	107.8	64.6	72.3	49.4*	74.8*	76.6	146.0
4	92.9	117.0	88.3	164.0	60.0	67.8	80.5	94.0
5	11.7	136.0	105.0	112.0	127.0	122.0	316.0*	86.7
6	71.5	104.1	83.5	69.1	92.9	60.2	114.0	109.0
7	101.0	100.0	97.8	121.0	80.6	104.0	101.0	101.0
8	86.2	93.2	111.0	75.5	61.6	80.0	102.8	80.7
9	112.0	96.7	129.0*	129.0*	127.0	95.6	72.0	177.0
10	100.0	119.0	106.0	95.9	110.0	99.4	121.0	85.5
11	101.0	123.0	79.6	96.8	120.0	140.0	108.0	137.0
12	107.0*	128.0*	80.5	108.0	107.0	134.0	107.0	95.3
13	0.0*	0.0*	47.6*	0.0*	72.2	98.0	*	33.9
14	106.6	96.5	100.4	94.8	89.5	104.8	65.6	54.8
15	15.0	33.8*	101.7	23.0	126.3	149.5	84.8	29.3

TABLE C-27

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR BIS(2-CHLOROETHYL)ETHER ANALYSIS BY WATER TYP
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	750.0	675.0	750.0	675.0	750.0	675.0	750.0	675.0
LAB NUMBER								
1	452.6	504.4	511.5	614.0	118.0	446.1	481.0	399.0
2	0.0*	0.0*	1038.6*	1588.0*	391.0	581.3	1124.1	1218.7
3	634.3	560.0	407.5	365.4	355.8*	363.0*	577.0	635.0
4	929.0	715.0	806.0	441.0	787.0	539.0	721.0	775.0
5	390.0	461.0	701.0	339.0	498.0	401.0	869.0	733.0
6	806.0	702.8	601.4	557.0	910.0	527.0	648.0	0.0*
7	711.0	555.0	687.0	698.0	717.0	531.0	664.0	671.0
8	711.5	545.8	776.3	687.6	524.0	472.2	459.8	655.9
9	894.0	639.0	993.0*	949.0*	920.0	833.0	1470.0*	448.0
10	546.0	764.0	695.0	759.0	584.0	692.0	837.0	643.0
11	583.0	426.0	398.0	572.0	662.0	592.0	826.0	588.0
12	851.0*	899.0*	1000.0	767.0	1020.0	888.0	864.0	761.0
13	1270.8	34.5	593.5*	34.1*	1794.2*	1343.7*	*	43.4
14	771.2	596.2	766.3	607.2	643.7	574.3	629.5	498.8
15	67.2	131.4	604.5	168.3	1.1	813.6	429.0	371.4

TABLE C-28

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR DI-N-BUTYLPHTHALATE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
LAB NUMBER								
1	2.3	3.0	5.4	3.9	4.5	5.4	4.4	6.1
2	1.2	2.4	84.0*	4.1	10.2	11.0	5.8	6.2
3	5.2	11.8	3.6	4.0	2.4	4.5	2.0	0.0*
4	2.6	2.5	1.3*	1.8*	1.8*	2.2*	0.6*	1.3*
5	68.2*	7.5	4.7	2.6	3.4	5.9	0.0*	0.0*
6	0.0*	1.6	2.7	0.0*	1.3	3.8	1.9	1.7
7	6.9	8.5	4.7	7.5	5.8	7.2	4.7	1.0
8	2.2	3.2	4.0	3.2	2.4	2.8	2.8	4.3
9	4.3	4.2	5.8*	5.7*	6.7	5.5	4.5	4.9
10	5.0	4.7	2.1	4.0	5.1	4.4	4.9	7.0
11	4.4	10.4	5.1	5.2	11.8	11.5	9.3*	8.7
12	5.3	0.0*	2.9	5.4	4.6	6.0	4.0	6.8
13	0.0*	7.7	6.0	5.0	6.5	6.3	*	14.3*
14	2.4	3.5	3.2	2.8	5.0	4.9	1.9	3.9
15	0.5*	1.5*	3.3*	1.0*	0.0*	2.6*	2.4	3.6

TABLE C-29

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR DI-N-BUTYLPHTHALATE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	105.0	94.0	105.0	94.0	105.0	94.0	105.0	94.0
LAB NUMBER								
1	95.1	86.1	93.9	83.8	99.4	86.4	98.3	87.0
2	64.7	61.6	69.4	52.8	50.2	73.2	65.8	63.1
3	73.6	87.9	67.2	56.5	56.0	55.5	27.0	28.8
4	32.1	32.6	19.8*	34.5*	31.9*	22.4*	16.6*	13.7*
5	3.6	798.9*	56.2	61.0	55.9	42.3	*	0.0*
6	31.1	26.9	18.4	42.1	20.4	62.3	17.6	0.0*
7	90.4	99.3	90.3	98.3	94.7	84.1	106.0	51.0
8	40.7	48.3	55.1	44.5	38.8	35.2	73.0	47.3
9	66.7	55.0	90.9*	97.4*	74.0	67.9	59.8	84.5
10	73.1	80.2	61.6	25.3	65.7	50.6	78.7	55.0
11	40.6	39.2	74.2	67.6	80.2	72.2	87.9	76.2
12	75.3	43.3	29.1	52.0	72.9	43.2	76.1	42.3
13	27.7	0.0*	55.3	109.3	64.0	63.6	51.0	*
14	80.8	66.7	76.7	66.9	73.4	63.3	61.6	24.2
15	13.8*	8.4*	38.5*	10.3*	39.0*	33.8*	24.9	37.8

TABLE C-30

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR DI-N-BUTYLPHTHALATE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	630.0	700.0	630.0	700.0	630.0	700.0	630.0	700.0
LAB NUMBER								
1	597.0	622.9	639.6	563.1	148.6	712.5	606.1	595.1
2	284.7	354.2	378.9	324.4	303.5	355.4	425.6	310.3
3	423.6	416.0	259.8	233.7	203.6	312.7	266.0	239.0
4	151.0	189.0	219.0*	131.0*	145.0*	205.0*	122.0*	195.0*
5	358.9	479.9	282.8	304.8	365.1	391.1	729.8	674.8
6	318.0	414.9	357.5	454.0	152.0	581.1	150.0	130.0
7	363.0	431.0	325.0	363.0	360.0	335.0	313.0	340.0
8	305.6	243.4	314.1	208.0	197.4	218.2	203.4	282.3
9	625.7	541.7	765.1*	679.1*	682.0	756.0	781.6	475.6
10	271.8	420.8	238.3	421.3	286.1	351.1	369.0	386.0
11	251.0	190.0	333.0	403.0	275.0	345.0	440.0	364.0
12	480.0	533.0	537.0	352.0	418.0	531.0	535.0	467.0
13	366.8	356.0	378.0	165.6	410.4	478.4	*	125.4
14	482.8	483.9	449.0	482.1	448.3	491.0	450.3	239.3
15	45.0*	62.6*	129.8*	60.2*	114.2*	287.4*	141.8	71.2

TABLE C-31

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR DIBENZO(A,H)ANTHRACENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	9.0	10.0	9.0	10.0	9.0	10.0	9.0	10.0
LAB NUMBER								
1	15.4*	16.5*	0.0*	13.0*	9.2	3.0	2.5	0.9
2	17.3	12.8	32.0*	4.2	1.6	1.2	3.4	2.4
3	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	5.3
4	51.6	10.8	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
5	39.7	8.6	2.9	4.3	7.1	4.4	*	11.9*
6	0.0*	6.4	0.0*	32.6*	0.0*	7.3	0.0*	0.0*
7	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
8	0.0*	4.6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
9	9.4	5.9	0.5	4.4	5.2	1.6	1.1	2.7
10	8.3	4.6	1.8	8.8*	5.7*	5.2*	5.2	5.2
11	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
12	8.3	0.0*	6.4	5.6	5.1	4.7	8.5	7.4
13	0.0*	1.9	2.5	0.0*	0.0*	4.7	1.0	*
14	8.8	10.2	0.0*	4.0	0.0*	0.0*	0.0*	0.0*
15	0.3	4.7	3.9	3.6	0.0*	0.0*	0.0*	0.0*

TABLE C-32

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR DIBENZO(A,H)ANTHRACENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	55.0	59.0	55.0	59.0	55.0	59.0	55.0	59.0
LAB NUMBER								
1	122.0*	98.8*	26.8	12.8	24.7	51.2	54.1	65.9
2	72.1	80.6	93.8*	52.7	25.9	29.7	30.6	25.4
3	0.0*	36.6*	0.0*	0.0*	3.8*	0.0*	4.0	4.5
4	25.8	103.0	1.5	4.1	0.0*	2.7*	1.7	5.0
5	7.8	49.7	34.2	17.5	25.5	43.2	94.8*	105.0*
6	104.9	69.2	31.0	67.5	10.3	94.0*	8.1	9.1
7	51.7	34.8	28.4	77.8	69.7*	12.5	52.5	5.1
8	0.0*	50.0	3.6	11.8	1.9	18.1	1.5	8.3
9	57.5	55.4	49.4	38.9	28.3	44.2	9.4	30.0
10	54.0	76.0	44.6	51.0	45.8*	67.0*	44.8	53.5
11	0.0*	0.0*	0.0*	9.3	18.0	15.3	9.9	6.6
12	51.9	54.9	43.1	34.7	31.7	36.5	49.5	59.2
13	14.8	0.0*	11.1	0.0*	29.1	13.3	6.7	5.3
14	54.1	43.6	33.7	15.9	13.6	14.1	12.9	6.4
15	4.8	21.3	46.3	10.8	4.7	0.0*	0.0*	10.3

TABLE C-33

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR DIBENZO(A,H)ANTHRACENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	400.0	360.0	400.0	360.0	400.0	360.0	400.0	360.0
LAB NUMBER								
1	1040.8*	878.3*	787.3	543.0	272.0	684.5	960.0	492.0
2	443.0	108.8	418.7	323.7	344.0	237.6	389.4	304.7
3	105.0*	70.0*	33.3*	33.2*	37.1*	40.4*	103.5	77.6
4	707.0	385.0	239.0	154.0	112.0*	0.0*	58.2	117.0
5	220.0	298.0	313.0	171.0	341.0	238.0	598.0*	359.0*
6	660.0	612.9	719.3	446.0	0.0*	620.7	228.0	139.7
7	757.0	2220.0*	869.0	1080.0*	1190.0*	1180.0*	449.0	661.0
8	432.1	258.4	269.5	281.0	179.0	278.0	169.1	179.8
9	465.0	294.0	567.0	379.0	436.0	389.0	468.0	259.0
10	266.0	560.0	605.0	605.0	1585.0*	740.0*	560.0	486.0
11	138.0*	41.6*	286.0	315.0	149.0	218.0	344.0	320.0
12	372.0	445.0	458.0	540.0	426.0	429.0	538.0	357.0
13	239.0	146.2	214.9	171.4	273.4	359.4	*	*
14	453.4	312.0	456.0	172.7	203.4	152.9	178.3	66.8
15	115.4	24.7	278.8	141.7	124.5	71.3	126.2	17.0

TABLE C-34

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR DIETHYL PHTHALATE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
LAB NUMBER								
1	4.2*	6.1*	4.4*	6.5*	4.1	5.6	5.2	4.3
2	0.0*	1.4	15.0*	0.0*	3.9	8.0	1.2	3.0
3	3.1	6.3	3.7	3.3	0.0*	2.1	4.2	3.0
4	1.8	0.0*	0.0*	0.0*	11.3	2.9	0.9*	0.0*
5	70.5*	4.2	3.5	2.2	1.2	3.9	2.5	*
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	1.3*	1.1*
7	5.4	5.2	3.9	5.5	3.9	6.4	5.2	6.5
8	0.0*	1.3	0.9	2.1	1.3*	2.3*	1.9	2.7
9	2.6	2.5	4.2	5.0	5.1	1.9	3.2	3.2
10	0.0*	2.2	0.9	1.8	3.6	2.3	3.6	7.1
11	2.9	10.2	3.6	3.9	10.6*	11.6*	9.3*	8.8*
12	1.3	7.0	0.6	2.7	1.1	3.2	1.4	4.0
13	0.0*	3.9	4.3	3.5	4.1	4.7	*	*
14	6.2	4.8	8.0	4.1	9.0	8.2	5.2	13.5*
15	0.8*	0.7*	1.3	0.2	0.0*	2.2	1.0	1.1

TABLE C-35

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR DIETHYL PHTHALATE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	105.0	94.0	105.0	94.0	105.0	94.0	105.0	94.0
LAB NUMBER								
1	84.7*	80.3*	102.0*	85.2*	91.8	82.3	96.6	75.6
2	27.3	24.2	31.3	18.0	14.4	60.6	26.1	41.2
3	65.3	80.8	63.5	52.2	52.2	52.0	50.0	61.0
4	33.5	28.0	6.2	20.0	35.9	28.3	2.7*	5.1*
5	4.0	49.1	57.7	54.6	62.0	24.6	92.8	*
6	0.0*	30.0	4.7	46.5	17.4	69.0	15.2*	14.4*
7	74.4	85.5	82.8	87.2	102.0	75.3	94.4	93.0
8	17.1	23.6	19.5	22.4	16.5*	16.9*	61.3	39.0
9	27.7	33.2	69.0	76.3	27.1	51.9	48.5	74.3
10	13.4	34.5	28.8	15.4	47.8	28.8	88.8	48.5
11	51.4	46.2	87.2	78.9	101.0*	92.9*	98.5*	89.9*
12	55.9	11.8	5.7	29.3	49.8	11.6	61.2	13.8
13	17.2	0.0*	60.0	67.9	67.2	80.6	39.6	48.9
14	64.8	69.3	70.5	90.4	88.6	71.7	80.1	23.9
15	6.0*	1.9*	31.6	7.1	23.7	27.9	26.6	31.7

TABLE C-36

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR DIETHYL PHTHALATE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	630.0	700.0	630.0	700.0	630.0	700.0	630.0	700.0
LAB NUMBER								
1	519.6*	636.3*	607.4*	581.0*	153.0	704.5	563.0	667.0
2	56.8	245.5	134.3	68.7	199.7	384.2	386.0	93.5
3	441.0	498.0	347.0	346.0	228.3	386.1	368.0	369.0
4	204.0	144.0	181.0	52.9	145.0	213.0	122.0*	188.0*
5	340.0	434.0	171.0	269.0	182.0	379.0	696.0	460.0
6	228.0	334.9	367.6	204.0	101.0	675.3	128.0*	114.7*
7	388.0	454.0	359.0	427.0	351.0	442.0	451.0	391.0
8	205.9	159.0	123.5	35.4	58.0*	114.2*	245.3	173.0
9	245.0	265.0	537.0	487.0	301.0	594.0	562.0	332.0
10	84.0	178.0	38.0	184.0	130.0	257.0	470.0	414.0
11	434.0	379.0	455.0	545.0	469.0*	532.0*	589.0*	508.0*
12	152.0	424.0	401.0	66.0	115.0	416.0	159.0	459.0
13	391.5	351.5	427.2	169.7	565.6	320.7	*	125.1
14	471.9	578.0	387.2	631.6	532.5	672.0	416.4	364.0
15	37.8*	76.2*	164.8	78.0	151.7	388.4	181.2	138.2

TABLE C-37

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ENDOSULFAN SULFATE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0
LAB NUMBER								
1	4.5*	7.5*	3.4	9.6	5.9	6.6	1.0	4.3
2	*	*	*	*	*	*	*	*
3	0.0*	3.2	2.4	0.0*	0.0*	0.0*	0.0*	0.0*
4	3.1	11.8	0.4	7.6	0.0*	0.0*	0.4	0.7
5	73.3*	20.9	6.9	5.5	7.0	8.7	*	*
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	4.6	5.0	4.7	6.0	6.6	5.3	6.2	4.1
8	0.0*	3.1	1.4	1.6	0.0*	1.3	0.0*	3.1
9	8.5*	5.5*	10.7*	10.6*	12.5*	17.8*	13.5*	17.2*
10	4.7	5.6	3.8	6.0	6.1	6.4	5.5	6.7
11	0.0*	0.0*	4.0	0.0*	8.0	7.5	0.0*	6.6
12	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
14	7.3*	10.4*	7.1	7.1	7.3	8.2	6.7	10.1
15	0.0*	0.0*	20.7*	0.0*	0.0*	15.0	6.3	21.6*

TABLE C-38

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ENDOSULFAN SULFATE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	101.0	112.0	101.0	112.0	101.0	112.0	101.0	112.0
LAB NUMBER								
1	91.0*	147.0*	102.0	115.0	111.0	137.0	102.3	119.0
2	*	*	*	*	*	*	*	*
3	28.5	40.8	24.3	31.0	21.1	24.3	9.9	16.6
4	19.1	24.0	5.9	19.3	12.9	16.9	5.4	3.7
5	8.3	0.0*	98.4	72.2	75.6	61.6	70.7	110.0
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	82.0	86.9	66.6	112.0	94.9	84.0	98.9	62.3
8	22.4	30.9	11.2	24.1	17.7	22.1	26.2	22.9
9	94.0*	119.0*	122.0*	201.0*	138.0*	115.0*	158.0*	188.0*
10	54.4	65.7	45.6	39.6	53.5	56.4	53.3	49.4
11	31.3	40.9	75.7	87.4	88.1	103.0	88.4	88.8
12	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
14	102.5*	107.5*	100.6	105.9	103.0	99.1	83.4	44.9
15	0.0*	0.0*	172.4	0.0*	0.0*	146.0	80.3	180.8

TABLE C-39

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ENDOSULFAN SULFATE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	750.0	675.0	750.0	675.0	750.0	675.0	750.0	675.0
LAB NUMBER								
1	919.9*	955.2*	895.8	653.0	287.0	769.7	930.0	775.0
2	*	*	*	*	*	*	*	*
3	234.9	210.5	141.0	131.9	118.0	139.6	180.6	143.9
4	113.0	133.0	155.0	73.7	124.0	72.0	78.7	88.5
5	350.0	453.0	535.0	285.0	478.0	374.0	1070.0	738.0
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	804.0*	668.0	619.0	856.0	762.0	839.0	533.0	615.0
8	273.0	331.4	206.3	187.5	196.7	159.4	163.4	198.7
9	863.0*	860.0*	1470.0*	835.0*	1510.0*	1080.0*	1600.0*	1070.0*
10	218.0	319.0	256.0	287.0	273.0	280.0	327.0	305.0
11	325.0	192.0	448.0	474.0	379.0	422.0	644.0	420.0
12	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	0.0*
14	794.8*	698.0*	829.0	684.6	745.9	686.5	787.3	424.7
15	12.7	0.0*	1186.4	0.0*	853.3	0.0*	19.3	342.8

TABLE C-40

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR FLUORANTHENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
LAB NUMBER								
1	5.2	5.7	3.5	5.9	5.3	5.3	4.1	12.4
2	7.1	6.0	73.0*	6.5	6.7	7.2	7.8	6.4
3	4.0	5.4	3.5*	3.8*	2.7*	3.4*	1.0*	1.1*
4	7.6	8.2	6.6	6.4	5.6	4.6	4.8	5.8
5	80.3*	7.3	5.4	4.7	6.9	6.1	0.0*	0.0*
6	4.6	5.6	5.3	8.3	5.3	5.3	3.2	2.2
7	4.9	6.1	4.5	5.6	5.9	6.0	4.9	3.3
8	6.4	5.4	6.0	5.4	3.2	4.1	4.8	6.2
9	7.5	6.3	8.1*	7.5*	7.6*	8.9*	6.1	8.1
10	7.6	8.6	4.2	8.6	6.7	6.9	8.7*	6.9*
11	3.9*	4.3*	5.1	5.4	5.8	5.4	4.6	5.7
12	7.0	7.2	7.3	7.3	11.9*	7.7*	7.5	7.7
13	0.0*	6.5	6.3	5.1	4.8	7.0	23.2*	15.2
14	5.6	6.0	5.0	6.0	5.6	6.2	4.6	6.4
15	1.0*	2.3*	6.8	2.0	0.0*	4.9	3.2	3.7

TABLE C-41

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR FLUORANTHENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	105.0	94.0	105.0	94.0	105.0	94.0	105.0	94.0
LAB NUMBER								
1	97.8	88.4	95.5	87.9	97.4	92.2	89.3	95.3
2	95.2	90.3	95.3	84.1	86.5	80.0	98.0	80.8
3	51.0	68.7	41.3*	40.9*	43.0*	42.0*	23.5*	21.6*
4	97.6	104.0	107.0	109.0	62.1	65.4	96.7	72.0
5	5.4	86.7	83.2	72.5	67.7	65.8	0.0*	0.0*
6	98.0	80.9	83.1	87.6	80.6	82.5	38.3	46.4
7	93.0	83.3	81.3	88.1	92.5	74.5	91.8	43.2
8	106.5	86.4	90.8	74.3	86.4	69.8	89.5	65.4
9	116.0	92.2	115.0*	117.0*	126.0*	80.4*	83.4	94.8
10	122.0	150.0*	123.0*	91.0	123.0	92.5	92.0*	98.5*
11	33.6*	36.4*	79.9	74.1	78.9	70.0	86.0	75.3
12	104.0	99.9	96.8	84.9	101.0*	96.1*	99.4	91.9
13	38.4	0.0*	81.0	91.5	100.3	84.0	59.7	71.9
14	91.9	79.7	87.7	73.2	86.7	77.0	68.2	33.8
15	32.3*	38.3*	86.4	23.7*	113.4	66.7	53.3	63.7

TABLE C-42

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR FLUORANTHENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	630.0	700.0	630.0	700.0	630.0	700.0	630.0	700.0
LAB NUMBER								
1	612.6	651.6	612.5	593.0	160.0	662.8	622.0	607.0
2	419.1	454.8	490.8	466.9	452.0	389.5	502.1	545.2
3	241.1	244.3	123.3*	130.3*	103.6*	151.5*	188.4*	179.3*
4	484.0	950.0	318.0	313.0	268.0	326.0	224.0	294.0
5	380.0	417.0	402.0	315.0	458.0	344.0	0.0*	0.0*
6	318.0	508.2	457.2	546.0	334.0	513.0	257.7	225.6
7	398.0	405.0	359.0	380.0	389.0	403.0	332.0	369.0
8	511.3	604.5	539.4	461.9	461.3	480.5	353.2	578.2
9	801.0	718.0	916.0*	760.0*	838.0*	822.0*	738.0	580.0
10	375.0	655.0	565.0	720.0	432.0	700.0	515.0*	770.0*
11	219.0*	149.0*	312.0	379.0	254.0	320.0	444.0	341.0
12	471.0	592.0	516.0	502.0	542.0*	551.0*	594.0	514.0
13	498.5	571.5	566.4	268.2	531.7	704.9	*	184.6
14	501.9	507.8	502.8	497.5	470.5	511.1	472.2	267.1
15	42.4*	81.2*	230.2	91.5	167.9	1.4	193.8	102.2

TABLE C-43

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR HEPTACHLOR ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	11.0	12.0	11.0	12.0	11.0	12.0	11.0	12.0
LAB NUMBER								
1	5.1	6.6	4.7	7.2	3.9	4.5	4.5	5.4
2	8.0	8.0	7.0	6.0	6.0	6.0	8.0	7.0
3	4.5	6.2	3.9*	3.6*	2.6*	0.0*	0.0*	0.0*
4	8.5	7.4	6.6	8.4	6.0	6.7	4.3	5.2
5	115.0*	8.8	7.9	7.3	8.4	0.0*	*	180.0*
6	0.0*	6.6	0.0*	0.0*	9.1	0.0*	0.0*	0.0*
7	2.9	4.4	4.0	3.8	3.9	4.2	5.0	2.3
8	3.9	3.4	0.0*	2.9	0.0*	2.7	2.3	6.5
9	14.8	11.3	11.8*	14.4*	14.1*	14.0*	10.9	15.7
10	8.0	6.9	7.3	8.0	7.7	8.4	5.3	7.9
11	3.2	3.6	4.6	5.5	0.0*	0.0*	4.9	7.5
12	12.4	12.7	9.6	12.4	6.7	9.6	10.0	13.3
13	0.0*	5.6	4.1	2.9	0.0*	5.6	*	*
14	8.7*	12.2*	6.8	8.7	7.8	7.7	3.5	6.0
15	0.0*	0.0*	5.0	0.3	0.0*	5.4	3.7	4.1

TABLE C-44

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR HEPTACHLOR ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	81.0	90.0	81.0	90.0	81.0	90.0	81.0	90.0
LAB NUMBER								
1	65.0	64.7	44.8	51.1	49.0	56.5	55.2	62.7
2	74.0	82.0	68.0	75.0	60.0	62.0	57.0	57.0
3	23.3	46.0	16.7*	22.3*	15.3*	20.3*	3.5*	9.0*
4	56.8	56.1	32.1	31.9	24.7	25.0	22.5	23.5
5	9.4	78.0	103.0	66.8	56.8	84.1	130.0*	*
6	0.0*	127.0	127.0	32.3	112.0	26.6	67.2	95.1
7	49.6	61.8	41.6	55.1	51.5	30.6	67.6	25.3
8	105.1	74.1	34.5	46.4	38.1	58.5	39.5	38.6
9	99.8	87.6	98.7*	83.9*	85.0*	78.2*	41.8	88.0
10	59.2	62.0	50.3	50.7	46.4	55.2	46.1	37.1
11	14.8	19.6	37.7	44.6	44.3	46.5	45.3	58.5
12	78.8	103.0	64.3	85.5	103.0	90.2	90.6	83.8
13	0.0*	0.0*	28.4	36.5	36.8	34.4	*	19.4
14	107.2*	97.5*	77.1	68.4	60.5	63.1	48.3	20.0
15	16.8*	24.2*	70.0	20.3	0.0*	39.1	20.3	41.7

TABLE C-45

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR HEPTACHLOR ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	600.0	540.0	600.0	540.0	600.0	540.0	600.0	540.0
LAB NUMBER								
1	538.1	502.5	561.4	410.0	127.0	536.6	578.0	371.0
2	618.0	536.0	554.0	500.0	493.0	369.0	604.0	478.0
3	269.4	218.1	116.9*	92.9*	81.1*	105.5*	202.9*	150.8*
4	193.0	409.0	135.0	110.0	103.0	136.0	52.8	130.0
5	620.0	563.0	593.0	455.0	874.0	430.0	318.0	0.0*
6	1330.0	1070.1	1634.8*	1370.0*	1380.0	1175.2*	1050.0	422.5
7	540.0	628.0	461.0	506.0	483.0	500.0	360.0	585.0
8	960.5	1505.3*	892.4	665.1	939.3	463.9	418.8	589.0
9	794.0	589.0	817.0*	616.0*	823.0*	691.0*	790.0	418.0
10	219.0	332.0	294.0	287.0	265.0	271.0	308.0	281.0
11	231.0	103.0	371.0	380.0	285.0	317.0	587.0	393.0
12	560.0	596.0	607.0	446.0	645.0	528.0	572.0	525.0
13	341.1	570.2	399.7	49.5	362.7	351.4	*	47.2
14	847.1*	597.0*	270.4	567.0	599.3	523.0	580.1	176.3
15	209.3*	309.1*	775.3	333.4	215.9	150.3	262.9	147.0

TABLE C-46

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR HEXACHLOROBENZENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
LAB NUMBER								
1	4.8	6.6	2.1	6.3	5.1	5.7	4.4	3.0
2	8.0	6.0	59.0*	6.6	5.3	6.4	4.9	5.5
3	2.9	4.0	2.8*	2.3*	0.0*	2.5*	0.4*	3.1*
4	7.5	7.2	5.5	4.4	6.1	6.9	4.8	4.0
5	62.7*	5.6	3.9	4.9	4.7	4.5	*	2.0
6	6.1	6.3	8.2*	6.6*	6.0	6.3	3.3	2.8
7	5.2	5.6	5.3	6.0	5.1	5.0	4.4	2.8
8	5.4	5.0	1.4	3.6	2.0	3.4	3.1	4.9
9	7.0	5.0	7.3*	7.7*	7.9*	7.5*	6.3*	7.1*
10	5.7	5.7	5.0	7.0	5.7	6.6	4.7	5.5
11	2.3*	2.7*	3.6	3.9	2.6	2.8	3.0	3.8
12	6.9	7.1	7.4	6.4	0.0*	6.6	7.5*	7.2*
13	0.0*	2.8	5.9	5.2	4.1	7.3	*	*
14	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
15	0.8	2.4	4.9	2.5	0.0*	5.4	3.7	4.1

TABLE C-47

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR HEXACHLOROBENZENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	80.0	76.0	80.0	76.0	80.0	76.0	80.0	76.0
LAB NUMBER								
1	74.0	66.9	68.9	65.9	69.4	76.5	64.9	61.4
2	82.3	80.5	79.2	72.5	65.6	63.3	64.0	59.8
3	23.3	31.3	15.6*	19.8*	17.9*	19.7*	12.9*	13.6*
4	90.3	91.3	52.6	53.2	50.0	41.1	44.0	26.3
5	5.1	55.6	67.9	45.4	0.0*	52.9	37.4	*
6	82.2	69.3	78.4*	74.2*	63.4	81.7	34.5	32.7
7	62.8	63.4	62.6	70.6	61.3	51.5	65.8	32.7
8	74.9	67.7	29.3	53.8	39.5	44.9	67.0	50.1
9	90.0	75.6	86.7*	81.9*	80.4*	63.4*	63.7*	78.1*
10	70.6	74.8	74.9	55.8	62.2	65.9	59.0	46.8
11	16.2*	17.2*	46.8	47.4	44.2	38.4	49.7	49.5
12	81.2	80.6	83.1	69.0	83.9	75.6	77.2*	80.6*
13	15.5	0.0*	70.1	69.6	74.7	68.4	15.8	29.2
14	33.6	17.7	34.9*	17.8*	25.0*	12.3*	20.3*	0.0*
15	25.4	26.8	60.1	20.2	70.0	46.7	30.6	43.8

TABLE C-48

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR HEXACHLOROBENZENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	510.0	535.0	510.0	535.0	510.0	535.0	510.0	535.0
LAB NUMBER								
1	502.8	466.6	474.7	448.0	143.0	479.5	470.0	461.0
2	409.0	411.0	423.7	415.1	423.0	322.1	424.6	496.1
3	134.3	143.1	70.3*	70.6*	53.2*	77.7*	158.9*	116.8*
4	417.0	517.0	236.0	173.0	159.0	206.0	112.0	138.0
5	320.0	329.0	329.0	249.0	403.0	262.0	472.0	366.0
6	494.0	547.9	489.4*	528.0*	281.0	556.5	233.0	192.4
7	425.0	436.0	416.0	445.0	387.0	369.0	331.0	384.0
8	461.7	636.8	345.9	483.1	340.2	242.9	354.8	350.3
9	611.0	563.0	725.0*	608.0*	618.0*	632.0*	615.0*	436.0*
10	220.0	358.0	273.0	395.0	282.0	297.0	301.0	319.0
11	47.0*	83.3*	240.0	263.0	180.0	210.0	312.0	247.0
12	405.0	522.0	475.0	482.0	472.0	499.0	556.0*	436.0*
13	435.2	281.4	529.0	156.4	487.7	426.3	*	79.5
14	262.9	186.4	284.3*	178.7*	170.9*	182.1*	182.9*	76.8*
15	70.9	139.6	339.3	117.2	183.1	161.2	199.3	135.5

TABLE C-49

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ISOPHORONE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
LAB NUMBER								
1	5.6	10.5	2.8	9.3	5.2	6.8	5.8	3.1
2	0.0*	0.0*	146.0*	25.0	6.6	41.0*	11.4	6.3
3	6.0	3.7	3.9	0.4	0.0*	4.5*	77.3	90.4*
4	6.3	3.3	6.2	8.5	6.3	9.2	5.4	7.8
5	83.5*	6.3	6.0	4.4	5.7	6.0	14.7	*
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	9.1	11.2
7	8.8*	10.5*	9.1	11.8	13.8*	13.1*	19.1*	20.9*
8	8.8	7.6	20.1*	5.3	4.7	7.5	9.3	9.5
9	10.8	7.1	0.0*	9.9	0.7	11.1	6.9	12.0
10	11.0	3.1	8.3	9.9	9.4	10.6	6.4	11.2
11	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
12	9.6	8.7	6.3	8.3	9.8	8.3	3.4	7.3
13	0.0*	0.0*	8.9	0.0*	1.4	0.0*	61.5	*
14	30.2*	15.3*	25.3*	22.8*	33.1*	21.6*	33.1*	79.1*
15	0.0*	0.0*	0.0*	21.5	0.0*	0.8	0.3*	0.5*

TABLE C-50

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ISOPHORONE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	90.0	81.0	90.0	81.0	90.0	81.0	90.0	81.0
LAB NUMBER								
1	86.0	82.5	104.0	74.7	90.6	82.1	80.2	80.9
2	124.5	85.2	67.6	142.2	201.5*	18.8	138.2	121.8
3	0.0*	122.0	74.7	71.8	55.8*	78.3*	175.0	170.0
4	113.0	88.2	88.6	89.0	114.0	80.8	78.6	73.6
5	5.0	78.8	87.2	77.1	89.2	78.8	119.0	25.1
6	135.2	77.5	78.4	38.0	88.7	46.3	8.2	98.1
7	182.0*	146.0*	213.0	237.0*	253.0*	233.0*	248.0*	267.0*
8	146.0	96.0	136.5	42.0	113.0	97.0	115.0	86.0
9	134.0	85.1	135.0	109.0	137.0	85.8	85.1	132.0
10	183.0	147.0	163.0	98.6	125.0	154.0	157.0	90.6
11	57.0	0.0*	85.0	81.1	98.7	105.0	98.0	85.5
12	107.0	105.0	76.9	89.3	109.0	115.0	92.2	47.4
13	0.0*	0.0*	69.8	0.0*	102.3	269.8*	52.0	*
14	126.0*	329.2*	169.0*	248.0*	322.3*	108.6*	342.6*	191.6*
15	15.8*	8.2*	32.3	38.5	53.3	25.9	0.7*	16.8*

TABLE C-51

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR ISOPHORONE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	540.0	600.0	540.0	600.0	540.0	600.0	540.0	600.0
LAB NUMBER								
1	431.8	642.6	495.0	535.0	117.0	569.2	456.0	499.0
2	0.0*	911.0	1250.1	1710.0	816.0	874.6	1375.8	2080.0*
3	438.0	530.0	271.3	305.3	0.0*	307.6*	624.0	727.0
4	514.0	669.0	423.0	337.0	500.0	575.0	344.0	628.0
5	360.0	448.0	462.0	293.0	391.0	361.0	209.0	573.0
6	583.0	490.4	0.0*	535.0	0.0*	536.9	0.0*	8.7
7	1220.0*	1320.0*	933.0	1360.0	1240.0*	1320.0*	1370.0*	1520.0*
8	744.0	980.0	985.3	637.2	794.0	572.0	504.0	893.0
9	890.0	699.0	801.0	871.0	809.0	861.0	1000.0	464.0
10	469.0	1120.0	669.0	1010.0	799.0	672.0	868.0	800.0
11	379.0	312.0	398.0	439.0	391.2	468.0	1111.0	450.0
12	671.0	853.0	783.0	672.0	819.0	820.0	392.0	613.0
13	632.0	0.0*	0.0*	211.3	0.0*	0.0*	*	*
14	1018.5*	2967.4*	1029.3*	2469.9*	856.0*	2388.5*	2649.7*	3168.3*
15	66.9*	159.0*	226.6	491.7	245.4	518.0	261.3*	160.7*

TABLE C-52

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR NAPHTHALENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
LAB NUMBER								
1	5.5	6.3	5.4	6.6	4.9	6.6	4.0	5.2
2	7.3	6.6	76.0*	8.3	7.6	9.3	6.2	6.9
3	6.1	7.7	5.5	5.7	3.8	5.3	4.9	3.6
4	6.6	20.4*	6.6	7.9	8.6*	8.2*	7.6	7.9
5	79.2*	6.3	4.6	5.0	6.0	5.2	0.0*	0.0*
6	6.3	5.0	6.6	4.7	0.0*	5.5	10.0	7.6
7	7.5	7.3	7.7	7.6	6.6	6.6	5.3	6.6
8	5.3	5.8	6.9	6.3	2.9*	5.0*	6.5	6.5
9	8.4	5.5	8.2*	8.3*	7.5	9.4	6.0	9.4
10	6.9	6.5	5.6	7.6	6.7	7.8	5.6	6.3
11	3.5	4.4	4.6	4.7	4.1	5.0	4.2	4.5
12	8.3*	8.0*	6.9	7.5	8.4	7.5	7.1	7.6
13	0.0*	6.8	5.2	4.5	4.5	4.2	7.4	*
14	8.1	8.4	6.7	7.6	8.7	8.4	5.2	7.6
15	0.0*	2.4*	3.9*	1.8*	54.5*	5.4	5.9	4.5

TABLE C-53

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR NAPHTHALENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	105.0	94.0	105.0	94.0	105.0	94.0	105.0	94.0
LAB NUMBER								
1	80.2	67.2	95.9	78.7	82.3	76.4	74.3	67.7
2	106.4	96.2	96.9	88.7	99.2	88.4	88.2	86.6
3	85.4	101.5	75.0	69.7	73.1	65.9	59.3	68.2
4	113.0	101.0	124.0	115.0	110.0*	97.2*	114.0	83.0
5	5.9	70.9	81.1	66.3	72.5	66.5	0.0*	0.0*
6	88.8	83.5	88.1	72.1	98.2	80.4	99.7	86.8
7	75.2	87.5	102.0	91.2	84.5	73.9	87.4	81.4
8	88.7	74.8	90.6	72.3	66.2*	63.7*	40.7	71.6
9	125.0	80.3	120.0*	116.0*	138.0*	73.8	83.7	100.0
10	94.2	93.6	101.0	67.3	85.2	86.4	84.4	63.6
11	43.5	46.2	70.3	65.8	75.4	67.7	74.4	63.9
12	105.0*	101.0*	0.0*	87.6	105.0	100.0	111.0	83.0
13	14.5	0.0*	68.6	107.8	89.0	79.8	39.4	26.9
14	98.9	84.5	94.0	83.5	95.2	89.3	76.4	40.2
15	20.0*	25.2*	66.3*	23.0*	83.9	59.9	69.8	35.4

TABLE C-54

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR NAPHTHALENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	630.0	700.0	630.0	700.0	630.0	700.0	630.0	700.0
LAB NUMBER								
1	487.6	540.4	546.5	519.0	125.0	609.3	438.0	499.0
2	522.7	548.8	586.1	563.8	458.3	438.9	571.0	568.1
3	497.0	617.0	410.0	414.0	348.0	485.0	449.0	459.0
4	580.0	958.0*	507.0	360.0	690.0*	757.0*	441.0	490.0
5	330.0	457.0	393.0	310.0	437.0	364.0	1406.6*	1226.6*
6	577.7	395.4	331.0	579.5	529.0	469.7	341.7	488.6
7	312.0	419.0	382.0	415.0	350.0	377.0	380.0	363.0
8	350.0	353.0	393.1	388.7	307.6*	281.2*	268.6	430.7
9	848.0	636.0	852.0*	838.0*	837.0	740.0	842.0	491.0
10	290.0	516.0	377.0	550.0	386.0	431.0	432.0	500.0
11	345.0	305.0	354.0	415.0	365.0	402.0	435.0	371.0
12	709.0*	757.0*	745.0	792.0	627.0	742.0	752.0	632.0
13	593.2	620.9	458.8	168.5	568.5	819.6	*	68.6
14	523.1	531.2	526.0	539.7	492.3	528.1	500.6	447.0
15	82.6*	106.3*	189.8*	52.3*	179.4	1107.2	2o2.3	152.4

TABLE C-55

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR PCB-1260 ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	40.0	36.0	40.0	36.0	40.0	36.0	40.0	36.0
LAB NUMBER								
1	13.1	8.8	3.5	9.9	7.0	7.4	5.4	3.6
2	*	*	*	*	*	*	*	*
3	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
4	26.4	18.2	2.6	2.9	0.0*	0.0*	0.0*	0.0*
5	134.0*	29.2	24.0	31.6	36.3*	19.1*	*	*
6	0.0*	18.9	0.0*	19.5	0.0*	10.4	0.0*	0.0*
7	10.4	6.5	3.4	8.8	7.0	4.1	17.8*	2.3
8	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	14.0
9	32.0	1.9	0.0*	5.7	13.6	0.0*	0.0*	1.4
10	26.2	7.3	11.8	16.6	10.0	9.5	4.3	13.8
11	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
12	27.9	19.5	32.8*	11.7*	18.4*	16.2*	43.3*	21.7*
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	30.6	28.0	2.7	8.8	11.1	0.0*	2.6	0.0*
15	6.8	32.4	48.7*	2.6	0.0*	0.2	4.7	4.7

TABLE C-56

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR PCB-1260 ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	100.0	90.0	100.0	90.0	100.0	90.0	100.0	90.0
LAB NUMBER								
1	53.0	25.4	7.3	4.1	34.0	14.5	22.9	23.6
2	*	*	*	*	*	*	*	*
3	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
4	100.0	61.8	1.7	3.2	0.0*	0.0*	3.0	0.0*
5	54.6	69.8	83.2	314.0*	48.1*	99.8*	155.0*	171.0*
6	77.3	75.1	84.1	58.7	15.8	51.4	0.0*	0.0*
7	44.3	53.4	24.9	48.5	43.7	12.3	57.1	12.4
8	40.0	67.0	0.0*	31.7	11.1	33.4	0.0*	20.2
9	68.4	54.0	39.2	16.6	0.0*	51.5	0.0*	25.6
10	63.0	69.0	25.2	51.5	39.4	50.1	45.8	25.4
11	0.0*	0.0*	0.0*	0.0*	31.4	0.0*	0.0*	0.0*
12	134.0	118.0	115.0*	69.5*	68.5*	71.9*	125.0*	141.0*
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	77.8	74.0	55.8	41.4	47.7	32.5	44.7	0.0*
15	115.1	85.7	86.8	6.9	0.0*	0.2	0.0*	18.4

TABLE C-57

ENVIRONMENTAL MONITORING AND SUPPORT LAFORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR PCB-1260 ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	667.0	600.0	667.0	600.0	667.0	600.0	667.0	600.0
LAB NUMBER								
1	379.2	241.3	323.4	251.0	100.0	276.8	370.0	212.0
2	*	*	*	*	*	*	*	*
3	230.0	181.0	73.0*	28.0*	53.0	69.8	172.0	106.0
4	336.0	302.0	155.0	91.1	96.3	88.5	37.5	45.0
5	670.0	621.0	733.0	417.0	686.0*	495.0*	982.0*	651.0*
6	928.0	712.5	718.8	841.0	352.0	725.8	284.0	234.0
7	579.0	571.0	464.0	529.0	570.0	471.0	427.0	508.0
8	478.4	409.9	681.8	352.2	900.0	172.5	220.3	1190.0*
9	648.0	230.0	543.0	434.0	32.1	472.0	635.0	319.0
10	261.0	387.0	398.0	442.0	387.0	407.0	437.0	374.0
11	222.0*	81.0*	496.0	461.0	309.0	353.0	594.0	440.0
12	152.0	1100.0	1140.0*	1160.0*	1120.0*	1070.0*	1380.0*	862.0*
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	652.4	541.5	633.3	461.8	526.3	469.7	579.5	105.2
15	433.1	0.0*	682.3	57.9	2.7	0.0*	205.5	79.8

TABLE C-58

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 1,3-DICHLOROBENZENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	5.0	6.0	5.0	6.0	5.0	6.0	5.0	6.0
LAB NUMBER								
1	2.3	4.2	1.7	4.4	1.4	3.5	0.7	1.4
2	2.6	3.0	100.0*	3.0	3.8	0.0*	1.9	3.0
3	3.6	6.9	3.7	4.2	2.9	4.0	6.5	4.7
4	4.7	17.4*	8.2*	8.1*	8.3	3.8	4.5	12.5
5	78.4*	6.6	5.1	3.3	6.3	58.0*	*	0.7
6	0.0*	3.0	3.4	0.0*	3.4	0.0*	3.3	4.8
7	3.9	2.8	3.4	4.1	2.5*	3.3*	2.3	3.2
8	5.1*	9.3*	8.6	2.1	3.5	2.9	9.2*	6.5*
9	7.7	2.6	7.8	8.0*	8.0	9.3*	5.3	10.7
10	2.3	2.3	1.7	14.6*	8.3*	11.1*	5.8	6.4
11	1.9	2.5	2.3	2.2	2.7	3.3	2.1	2.5
12	4.8	5.8	4.2	4.1	4.7	4.0	4.2	4.1
13	0.0*	0.0*	2.8	1.8	0.0*	4.3	*	*
14	4.5	5.0	3.2	4.0	3.6	4.0	3.0	4.0
15	0.0*	4.5	2.9	4.7	0.0*	4.7	1.9	3.7

TABLE C-59

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 1,3-DICHLOROBENZENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	90.0	81.0	90.0	81.0	90.0	81.0	90.0	81.0
LAB NUMBER								
1	58.0	43.5	79.1	69.9	73.3	53.6	58.5	40.6
2	0.0*	76.0	81.9	78.6	83.0	68.0	100.7	101.5
3	104.8	122.9	96.2	81.4	85.3	84.4	91.2	142.3
4	150.0	72.7	95.6*	125.0*	122.0	73.1	75.3	114.0
5	4.8	83.5	65.8	71.1	93.7	61.2	89.8	46.9
6	72.8	73.8	76.1	63.6	64.3	61.9	85.5	57.6
7	49.2	63.1	75.3	67.3	61.0*	53.3*	57.1	56.8
8	135.7*	169.0*	166.4*	124.7	116.3	53.9	154.5*	104.7*
9	140.0	86.7	46.4	92.4	94.4	86.1	58.4	117.0
10	105.0	93.1	48.5	104.0	170.0*	145.0*	88.4	62.6
11	33.5	35.5	55.1	51.5	71.4	65.6	62.3	57.3
12	65.9	66.2	66.5	61.3	64.2	65.1	62.1	53.7
13	0.0*	0.0*	57.2	80.6	50.2	83.3	*	18.9
14	80.0	66.1	62.0	64.8	62.8	70.5	56.1	29.5
15	27.9	22.4	53.8	31.0	265.3*	47.9	34.2	25.6

TABLE C-60

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 1,3-DICHLOROBENZENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	540.0	600.0	540.0	600.0	540.0	600.0	540.0	600.0
LAB NUMBER								
1	364.6	388.8	443.4	486.0	83.6	445.0	343.0	360.0
2	0.0*	0.0*	673.3	947.0	748.2	493.2	718.3*	936.1
3	446.0	548.0	543.9	576.0	392.7	577.2	502.9	500.0
4	668.0	790.0	751.0*	665.0*	707.0	934.0	529.0	1020.0
5	270.0	455.0	321.0	283.0	402.0	357.0	425.0	423.0
6	518.0	508.3	338.4	474.0	509.0	442.4	430.0	0.0*
7	262.0	399.0	390.0	407.0	330.0*	355.0*	342.0	355.0
8	921.2*	1055.3*	1199.8	1274.7	395.6	829.0	575.1*	1217.7*
9	781.0	640.0	1000.0	936.0	834.0	889.0	980.0*	557.0
10	622.0	745.0	649.0	131.0	666.0*	918.0*	470.0	589.0
11	396.0	274.0	356.0	416.0	411.0	410.0	426.0	361.0
12	439.0	474.0	477.0	601.0	519.0	522.0	483.0	366.0
13	645.9	702.2	416.6	121.2	768.6	584.6	*	36.5
14	435.7	473.4	415.9	479.3	393.3	377.6	381.7	338.9
15	334.0	273.1	278.5	352.6	283.6	1238.3	344.5	3.4

TABLE C-61

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 2,6-DINITROTOLUENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	11.0	12.0	11.0	12.0	11.0	12.0	11.0	12.0
LAB NUMBER								
1	3.5	8.1	5.2	9.2	2.0	5.7	4.5	4.9
2	8.7	8.5	90.0*	11.4	11.4	13.6	11.6	13.3
3	5.6	10.0	5.3*	5.8*	3.5	3.0	4.8	6.9
4	12.4	9.4	10.2	11.8	11.2	11.6	11.7	16.7
5	77.8*	10.1	9.0	0.0*	8.8	4.8	*	*
6	0.0*	9.6	9.0	0.0*	3.1	0.0*	51.3*	6.5
7	8.8	9.1	7.9	9.1	8.9	9.4	9.2	10.7
8	6.2	10.6	10.1	10.4	3.5	5.3	9.0	10.6
9	14.8*	11.7*	15.8*	16.6*	13.9	17.6	15.6	16.7
10	8.8	7.5	5.9	9.9	9.4	9.8	7.9	9.5
11	8.6	13.2*	9.3	11.2	14.8	17.7	12.8	18.4
12	12.1	7.2	10.6	8.7	12.1	3.0	10.3	12.3
13	0.0*	7.9	9.9	6.6	8.5	7.6	*	*
14	7.3	9.5	6.4	9.5	6.5	9.0	6.1	11.5
15	2.4*	2.1*	4.1	9.2	87.2*	4.7	2.5*	0.8*

TABLE C-62

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 2,6-DINITROTOLUENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	81.0	90.0	81.0	90.0	81.0	90.0	81.0	90.0
LAB NUMBER								
1	68.0	96.8	69.7	83.6	60.5	76.9	66.6	66.0
2	86.6	94.2	85.0	91.8	86.5	92.8	90.1	100.5
3	76.4	120.5	63.8*	70.0*	57.8	84.5	73.5	82.0
4	84.6	109.0	93.9	114.0	98.7	103.0	83.5	76.0
5	7.2*	128.0	87.3	122.0	49.3	89.0	260.0*	*
6	38.6	95.0	76.4	62.7	90.6	80.9	80.7	142.0
7	79.3	96.1	83.7	97.5	79.2	92.4	85.3	101.0
8	68.6	76.2	80.0	79.0	62.3	69.9	72.7	73.1
9	113.0*	102.0*	112.0*	149.0*	136.0	88.2	112.0	116.0
10	92.4	100.0	92.4	69.2	82.4	95.9	75.5	76.2
11	48.2	55.7	76.5	83.8	92.8	111.0	82.3	111.0
12	84.6	97.5	77.1	85.4	91.4	95.3	82.9	91.1
13	0.0*	0.0*	63.5	54.5	108.1	85.7	41.3	*
14	80.6	79.9	78.7	79.3	68.3	83.6	51.0	36.5
15	30.5*	15.9*	57.7	83.8	117.6	64.5	34.6*	69.9*

TABLE C-63

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 2,6-DINITROTOLUENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	600.0	540.0	600.0	540.0	600.0	540.0	600.0	540.0
LAB NUMBER								
1	609.0	644.8	651.2	451.0	150.0	578.5	567.0	481.0
2	660.5	556.6	744.5	566.8	745.7	429.6	744.2	783.4
3	635.1	622.2	368.4*	331.6*	329.3	333.6	408.3	405.7
4	749.0	778.0	703.0	613.0	832.0	846.0	688.0	953.0
5	410.0	445.0	492.0	289.0	284.0	353.0	1200.0	238.0
6	810.0	625.8	771.6	605.0	848.6	884.4	787.0	575.0
7	616.0	631.0	629.0	624.0	658.0	607.0	646.0	590.0
8	664.6	655.7	703.5	675.1	590.7	553.1	480.5	747.7
9	923.0*	628.0*	978.0*	778.0*	996.0	717.0	992.0	671.0
10	368.0	620.0	482.0	623.0	506.0	549.0	571.0	585.0
11	579.0	391.0	529.0	544.0	625.0	633.0	854.0	543.0
12	638.0	716.0	764.0	687.0	780.0	737.0	797.0	576.0
13	573.0	738.1	562.4	105.5	698.0	532.7	*	61.3
14	573.8	579.7	579.3	587.7	543.1	505.5	603.3	408.1
15	252.9*	303.4*	486.2	821.7	509.1	1439.2*	609.7*	231.9*

TABLE C-64

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 3,3 -DICHLOROBENZIDINE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	40.0	36.0	40.0	36.0	40.0	36.0	40.0	36.0
LAB NUMBER								
1	40.7	31.1	25.4	10.8	36.7	25.7	26.0	35.6
2	27.5	23.2	62.0	29.8	17.6	33.9	45.7	42.2
3	9.6*	7.8*	0.0*	0.0*	7.7*	7.6*	21.3*	11.7*
4	36.7	34.8	31.5	20.4	31.5	0.0*	21.5	21.6
5	96.1	35.6	30.6	10.4	28.5	19.5	*	0.0*
6	12.1	19.7	31.1	47.3	38.9	31.7	50.7	36.9
7	13.5	21.2	16.3	11.5	32.0	27.7	36.2	27.0
8	17.6	13.8	5.9	15.2	8.1	11.8	11.9	15.5
9	35.3	23.8	30.0	17.8	44.2	28.2	25.6	29.2
10	24.6	25.7	16.2	36.0	32.0	18.8	45.2	24.1
11	18.4	20.9	20.0	18.2	35.1	26.5	23.0	26.5
12	87.9	49.0	68.0	71.0	86.0*	75.9*	73.3	2.2
13	77.2	54.5	47.9	50.2	53.5	55.4*	8.5*	*
14	120.3*	108.0*	71.4*	49.3*	1.9	142.8*	47.7*	114.5*
15	9.9	58.1	123.7*	31.3*	85.6*	44.7*	25.4	28.8

TABLE C-65

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 3,3 -DICHLOROBENZIDINE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	100.0	90.0	100.0	90.0	100.0	90.0	100.0	90.0
LAB NUMBER								
1	120.8	81.8	73.5	78.0	92.8	104.0	93.1	101.0
2	77.6	86.6	102.8	81.2	52.3	59.6	111.7	103.0
3	19.4*	47.8*	0.0*	0.0*	25.7*	30.2*	43.1*	58.0*
4	161.0	124.0	114.0	151.0	19.8	68.9	114.0	91.4
5	33.9	79.1	56.0	63.3	798.0*	78.5	0.0*	440.0*
6	110.5	86.6	112.0	112.4	116.0	97.9	137.0	122.0
7	92.2	67.6	58.1	49.7	83.9	67.0	156.0	104.0
8	48.0	50.7	21.5	46.7	34.7	35.5	50.7	35.9
9	85.0	76.5	68.4	103.0	84.0	59.0	67.3	64.4
10	73.0	120.0	115.0	83.8	227.0	77.3	112.0	123.0
11	41.4	34.2	45.3	51.6	101.0	89.5	81.9	45.3
12	203.0	124.0	206.0	75.4	232.0*	192.0*	201.0	188.0
13	206.0	0.0*	140.4	118.0	163.2	132.9	21.1*	118.6*
14	247.8*	418.3*	173.9*	392.2*	8.3	53.7	353.6*	176.0*
15	132.6	151.8	393.6*	107.1*	237.8*	103.2*	94.1	113.2

TABLE C-66

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 3,3 -DICHLOROBENZIDINE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	667.0	600.0	667.0	600.0	667.0	600.0	667.0	600.0
LAB NUMBER								
1	876.3	579.5	339.1	414.0	194.0	591.9	598.0	587.0
2	555.5	463.3	623.6	488.9	675.5	385.9	742.9	877.0
3	463.2*	237.5*	0.0*	0.0*	230.9*	246.2*	384.2*	407.4*
4	1290.0	1390.0	1100.0	735.0	1230.0	212.0	1090.0	826.0
5	570.0	381.0	404.0	340.0	1841.0	381.0	0.0*	0.0*
6	823.0	972.4	1284.5	1010.0	1070.0	988.4	884.0	966.8
7	911.0	793.0	650.0	522.0	1130.0	615.0	929.0	1190.0
8	835.3	716.1	401.7	401.2	447.0	304.4	322.7	512.8
9	650.0	480.0	725.0	526.0	720.0	526.0	594.0	453.0
10	395.0	578.0	900.0	1050.0	573.0	1790.0	978.0	1250.0
11	499.0	324.0	372.0	413.0	502.0	549.0	543.0	376.0
12	916.0	1450.0	1380.0	1280.0	1480.0*	1340.0*	1540.0	1040.0
13	1200.4	1661.0	1089.8	577.1	1032.0	6.1	*	188.5*
14	1570.8*	2196.5*	1188.5*	2988.4*	1363.1	2209.0	1350.9*	1648.2*
15	6.8	1078.2	2647.2*	1269.4*	1561.4*	2067.0*	1563.0	385.9

TABLE C-67

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 4-CHLOROPHENYL PHENYL ETHER ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	9.0	10.0	9.0	10.0	9.0	10.0	9.0	10.0
LAB NUMBER								
1	30.6*	36.6*	18.7*	37.6*	30.4*	36.1*	26.4*	19.6*
2	9.4	8.7	67.0*	10.0	8.2	10.9	8.0	8.2
3	5.1	6.7	5.0*	4.5*	3.8*	3.9*	1.7*	1.6*
4	10.7	10.1	7.0	10.2	10.7	12.1	8.0	8.1
5	56.5*	11.0	7.5	6.5	8.9	9.0	*	*
6	0.0*	11.1	10.5	10.4	9.8	8.3	7.9	6.9
7	9.4	9.4	8.7	9.8	9.1	9.4	7.6	7.6
8	7.7	7.8	6.7	7.4	3.6*	6.2*	7.5	8.7
9	10.3	8.1	11.6	10.9	11.0	13.4	8.5	11.9
10	6.1	6.3	5.3	6.6	7.7	8.1	6.3	7.0
11	139.0*	167.0*	187.0*	206.0*	178.0*	199.0*	178.0*	212.0*
12	13.0	13.1	11.7	12.2	13.3	11.9	12.3*	12.1
13	0.0*	7.9	10.5	7.6	7.2	10.2	*	*
14	9.4	11.1	8.5	9.6	9.0	9.7	7.0	12.2
15	0.0*	3.1*	6.8*	2.5*	18.2*	7.9	5.9	5.9

TABLE C-68

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 4-CHLOROPHENYL PHENYL ETHER ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	68.0	75.0	68.0	75.0	68.0	75.0	68.0	75.0
LAB NUMBER								
1	244.1*	258.6*	102.0*	262.0*	225.0*	286.0*	238.9*	245.0*
2	71.3	81.6	69.6	74.5	63.8	71.3	61.7	68.4
3	44.6	64.1	39.0*	45.5*	34.8*	42.5*	20.0*	25.4*
4	72.8	86.7	70.9	82.0	76.7	73.4	59.4	58.9
5	8.1	72.6	54.8	63.5	59.5	64.1	50.8	*
6	71.8	76.1	71.8	76.2	70.1	90.4	51.3	57.3
7	64.5	79.5	69.9	77.9	63.0	73.1	63.4	58.5
8	61.0	61.5	44.4	63.9	40.6*	48.2*	60.1	57.7
9	77.0	74.8	73.5	97.9	87.3	62.5	61.7	82.0
10	58.2	65.2	52.7	51.8	49.7	62.9	45.7	46.9
11	788.0*	1067.0*	1645.0*	1842.0*	1596.0*	1610.0*	1683.0*	1847.0*
12	87.6	103.0	82.7	86.0	93.2	101.0	82.4	92.5
13	14.0	0.0*	71.3	97.5	84.6	95.8	22.9	35.1
14	65.8	67.8	62.4	66.0	63.7	71.1	49.8	33.0
15	22.8*	23.0*	51.6*	18.8*	56.7	50.5	41.7	50.8

TABLE C-69

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 4-CHLOROPHENYL PHENYL ETHER ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	500.0	450.0	500.0	450.0	500.0	450.0	500.0	450.0
LAB NUMBER								
1	1931.5*	1629.5*	1909.2*	1470.0*	518.0*	1751.0*	1800.0*	1633.0*
2	434.0	368.7	489.7	381.6	428.0	317.0	478.3	503.5
3	253.2	235.8	179.5*	157.9*	140.5*	168.1*	189.1*	155.6*
4	540.0	542.0	413.0	334.0	447.0	446.0	337.0	406.0
5	350.0	268.0	328.0	223.0	397.0	0.0*	625.0	360.0
6	578.0	472.9	502.1	518.0	398.0	540.8	322.0	253.0
7	448.0	444.0	468.0	423.0	454.0	400.0	386.0	385.0
8	396.8	452.7	432.7	392.5	354.0*	266.9*	369.4	386.4
9	591.0	448.0	707.0	503.0	634.0	519.0	655.0	335.0
10	220.0	354.0	312.0	336.0	317.0	300.0	323.0	330.0
11	6937.0*	4629.0*	9690.0*	9719.0*	8070.0*	7960.0*	9999.0*	9281.0*
12	619.0	666.0	699.0	639.0	718.0	664.0	783.0	544.0
13	564.0	263.2	584.9	152.6	628.1	375.2	*	83.5
14	416.7	355.0	422.4	355.5	395.2	356.4	393.9	249.1
15	92.1*	140.3*	334.8*	106.9*	275.4	391.9	318.4	195.7

TABLE C-70

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 4,4 -DDD ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	7.0	8.0	7.0	8.0	7.0	8.0	7.0	8.0
LAB NUMBER								
1	3.6	3.9	2.9	4.2	3.3	3.5	2.9	0.0*
2	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	2.0	1.0
3	3.1	3.5	2.0	0.0*	0.0*	0.0*	0.0*	0.0*
4	4.4	6.4	2.5	2.9	2.3	1.8	2.2	2.5
5	69.3*	5.9	4.9	7.7	6.1	5.2	*	*
6	0.0*	1.7	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	3.6	5.1	3.1	5.0	4.2	4.3	13.1*	2.6
8	5.1	4.5	3.7	3.8	1.9	2.7	2.7	5.3
9	8.2*	6.4*	6.9*	7.5*	8.2*	7.5*	6.0*	7.1*
10	5.2	4.1	4.6	5.6	4.7	4.9	3.6	5.7
11	2.0	2.3	3.9	3.9	4.1	3.4	3.4	4.7
12	0.0*	0.0*	0.8	0.0*	2.7	0.0*	0.0*	0.0*
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	6.3*	7.7*	4.2	6.3	6.0	6.0	3.0	4.3
15	0.0*	0.2	6.4	0.3	0.0*	4.5	2.1	2.4

TABLE C-71

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 4,4 -DDD ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	54.0	60.0	54.0	60.0	54.0	60.0	54.0	60.0
LAB NUMBER								
1	38.6	36.1	19.8	27.1	31.7	32.4	28.0	34.1
2	0.0*	0.0*	4.0*	6.0*	0.0*	0.0*	14.0	13.0
3	7.6	23.3	6.4	7.5	6.7	9.1	6.8*	9.3*
4	74.4	36.7	11.6	13.3	6.6	8.7	8.8	6.4
5	8.5	106.0*	57.6	32.8	31.9	46.5	31.7	35.0
6	46.5	42.3	40.8	108.4*	18.9	147.3*	0.0*	4.8*
7	38.6	40.7	23.8	48.6	38.8	22.1	53.8	19.6
8	46.5	44.4	22.3	29.5	22.0	24.6	20.9	21.1
9	48.6*	54.7*	51.5*	53.3*	42.6*	47.1*	23.7*	46.2*
10	40.0	43.3	35.6	35.7	29.1	34.3	28.9	26.1
11	6.6	8.8	19.9	24.3	27.2	27.3	24.4	25.9
12	6.3	8.5	10.7	8.5	3.0	4.2	8.5	10.8
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	61.2*	66.3*	47.0	43.1	41.9	40.4	35.3	12.2
15	4.5	18.1	39.2	4.9	0.0*	18.1	7.0	17.5

TABLE C-72

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 4,4 -DDD ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	400.0	360.0	400.0	360.0	400.0	360.0	400.0	360.0
LAB NUMBER								
1	311.1	255.1	296.3	236.0	84.0	589.1	296.0	200.0
2	41.0*	45.0*	56.0*	108.0*	188.0	0.0*	29.0	103.0
3	104.4	85.0	59.6	42.0	38.8	53.8	109.5*	84.2*
4	238.0	314.0	137.0	107.0	64.4	58.3	36.4	57.4
5	380.0	342.0	404.0	232.0	431.0	281.0	378.0	255.0
6	493.0	2920.7*	5566.2*	696.0*	270.0	5501.1*	156.0*	78.7*
7	363.0	315.0	295.0	349.0	346.0	303.0	257.0	363.0
8	308.1	471.4	369.7	237.7	279.2	250.2	166.4	261.6
9	473.0*	341.0*	581.0*	372.0*	470.0*	404.0*	450.0*	275.0*
10	148.0	217.0	204.0	220.0	175.0	192.0	219.0	215.0
11	126.0	52.2	232.0	235.0	158.0	184.0	314.0	222.0
12	52.3	89.5	103.0	138.0	75.4	77.4	163.0	87.3
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	468.1*	396.7*	453.5	373.5	403.5	373.5	423.6	104.0
15	48.1	63.4	251.2	85.2	93.1	13.3	134.9	47.6

TABLE C-73

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 4,4 -DDE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0
LAB NUMBER								
1	10.0	9.6	5.0	10.2	7.6	9.7	6.8	7.2
2	10.0	9.0	7.0	8.0	5.4	3.4	14.0	6.0
3	2.4*	3.5*	1.6*	0.0*	0.0*	1.4*	0.0*	1.4*
4	11.9	11.5	3.8*	4.6*	4.1*	3.8*	2.1*	2.5*
5	153.0*	15.8	10.7	14.4	14.4*	10.4*	*	4.3
6	7.4	9.9	7.4	11.0	3.9	6.1	0.0*	0.0*
7	6.0	8.1	4.4	9.0	5.8	6.2	10.4	3.1
8	11.7	10.8	4.0	7.3	4.2	6.0	4.5	8.6
9	16.0*	12.8*	8.6*	12.1*	14.8*	10.9*	9.0	9.3
10	10.3	7.2	8.6	9.9	7.8	7.8	4.8	9.7
11	0.0*	0.0*	6.7	5.9	6.2	5.5	5.9	7.5
12	9.3	9.6	7.9	8.2	7.6	7.3	8.6	9.1
13	0.0*	9.2	12.5	6.7	8.0	8.8	*	*
14	11.5	13.7	4.6	8.9	7.2	7.0	3.6	4.8
15	4.1	4.5	11.9	2.6	6.6	7.1	3.7	3.7

TABLE C-74

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 4,4 -DDE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	101.0	112.0	101.0	112.0	101.0	112.0	101.0	112.0
LAB NUMBER								
1	90.0	67.9	30.1	34.8	64.8	51.5	50.5	66.0
2	67.0	77.0	48.0	54.0	43.4	20.4	49.0	44.0
3	8.0*	31.1*	4.5*	5.9*	5.1*	7.5*	8.8*	11.3*
4	129.0	75.9	8.6*	11.3*	8.3*	9.0*	8.1*	6.8*
5	21.8	103.0	109.0	57.5	62.4*	102.0*	33.2	*
6	73.3	79.8	63.4	76.3	22.9	53.2	13.1	10.2
7	69.6	78.1	43.8	86.9	65.0	32.0	78.1	28.0
8	97.7	97.2	33.8	50.2	29.8	37.2	29.5	28.3
9	115.0*	105.0*	100.0*	86.8*	77.4*	87.5*	30.8	59.2
10	70.3	75.9	55.5	62.2	49.9	59.4	49.8	43.1
11	10.2*	13.0*	30.5	35.2	45.6	45.4	33.2	34.0
12	61.2	70.9	49.1	47.1	43.2	51.7	58.1	65.3
13	24.6	0.0*	58.9	50.3	45.5	55.3	23.4	65.6
14	96.8	100.3	65.1	58.8	57.4	53.4	49.6	13.3
15	29.9	45.2	77.9	17.7	17.8	19.9	7.5	26.8

TABLE C-75

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (1) **

RAW DATA FOR 4,4 -DDE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	750.0	675.0	750.0	675.0	750.0	675.0	750.0	675.0
LAB NUMBER								
1	713.0	519.7	678.5	487.0	190.0	256.5	663.0	432.0
2	380.0	336.0	343.0	310.0	395.4	323.4	371.0	382.0
3	160.4*	131.0*	80.5*	62.1*	62.4*	74.4*	166.8*	115.7*
4	316.0	280.0	176.0*	121.0*	119.0*	139.0*	53.3*	84.9*
5	810.0	785.0	894.0	462.0	840.0*	598.0*	741.0	458.0
6	541.0	433.0	444.4	442.0	254.0	376.8	195.0	143.8
7	604.0	535.0	524.0	576.0	552.0	503.0	444.0	518.0
8	588.2	951.1	299.0	385.0	525.4	469.0	278.4	497.7
9	939.0*	659.0*	1090.0*	747.0*	957.0*	785.0*	800.0	520.0
10	246.0	346.0	329.0	315.0	287.0	320.0	340.0	325.0
11	212.0*	100.0*	329.0	348.0	258.0	286.0	476.0	320.0
12	292.0	314.0	304.0	252.0	330.0	280.0	334.0	279.0
13	607.7	549.3	804.4	239.2	636.5	502.9	*	107.4
14	710.8	578.8	669.7	534.7	582.7	534.8	634.7	131.5
15	195.3	199.9	454.6	126.2	162.7	70.6	245.8	118.3

TABLE C-76

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BENZO(G,H,I)PERYLENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	7.4	11.0	7.4	11.0	7.4	11.0	7.4	11.0
LAB NUMBER								
1	6.9	14.4	2.5	0.9	2.9	4.9	5.9	3.1
2	0.0*	13.7	5.3	3.8	3.1	1.3	5.9	5.9
3	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
4	19.4*	28.6*	3.8	5.7	10.5*	1.9	3.0*	0.0*
5	6.7	10.0	4.3	4.4	3.5	*	4.3	*
6	0.0*	12.6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	2.5
8	7.4	1.6	0.0*	0.0*	0.0*	1.4	0.0*	1.1
9	9.2	9.1	0.0*	3.5	1.5	5.7	1.7	3.3
10	9.6	8.4	3.6*	17.9*	1.0	13.3*	1.4	1.2
11	11.8*	17.3*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
12	5.3	8.1	4.9	5.6	3.4	3.9	5.0	6.5
13	0.0*	4.0	0.0*	3.9	0.0*	2.8	0.3	*
14	3.7	21.0	7.5*	5.6*	3.5	0.0*	19.6*	0.0*
15	2.2	8.1	6.3	5.5	0.0*	0.0*	2.0	0.0*

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TABLE C-77

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BENZO(G,H,I)PERYLENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	74.0	56.0	74.0	56.0	74.0	56.0	74.0	56.0
LAB NUMBER								
1	27.1	58.7	19.8	7.9	37.2	9.3	32.9	24.0
2	86.3	57.3	69.7	42.6	42.9	19.9	32.9	31.9
3	8.9*	18.5*	*	0.6*	0.0*	2.2*	4.8	5.1
4	228.0*	106.0*	13.5	5.7	21.2	8.9	23.5	2.9
5	71.6	56.0	41.2	23.4	44.8	28.6	*	65.8
6	86.0	43.7	34.6	16.1	0.0*	28.2	0.0*	12.2
7	34.4	21.6	16.4	13.2	8.3	7.3	29.9	41.6
8	84.5	43.8	0.0*	6.9	6.6	6.3	8.1	8.2
9	67.3	51.2	30.4	28.2	31.3	48.5	38.9	12.5
10	129.0	109.0	124.0*	57.5*	177.0*	19.6	51.5	41.7
11	152.0*	102.0*	41.2	31.2	97.9*	72.2*	37.2	41.4
12	45.1	39.8	31.2	24.7	30.8	22.0	47.5	36.5
13	24.3	26.4	24.8	12.7	39.3	9.9	9.1	*
14	121.9	96.4	70.2*	40.7*	32.3	24.1	37.0	36.8
15	33.9	20.9	116.8*	20.9	8.1	6.4	12.7	0.0*

TABLE C-78

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BENZO(G,H,I)PERYLENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	278.0	292.0	278.0	292.0	278.0	292.0	278.0	292.0
LAB NUMBER								
1	280.0	243.0	128.0	212.0	372.0	230.0	93.3	236.0
2	359.5	373.2	315.4	0.0*	239.2	350.9	167.3	196.1
3	109.0*	249.0*	21.0*	37.5*	23.6*	50.8*	54.9	43.5
4	967.0*	685.0*	190.0	139.0	132.0	4.7	62.7	143.0
5	209.0	250.0	307.0	196.0	153.0	168.0	40.9	310.0
6	246.0	132.0	259.0	0.0*	314.0	139.0	110.0	76.1
7	306.0	570.0	341.0	289.0	14.5	502.0	189.0	144.0
8	393.0	253.5	216.2	152.4	107.9	242.2	118.2	301.3
9	346.0	179.0	312.0	381.0	386.0	331.0	343.0	367.0
10	632.0	225.0	444.0*	465.0*	620.0	258.0	312.0	408.0
11	856.0*	716.0*	736.0	681.0*	537.0	590.0	444.0	680.0
12	183.0	216.0	191.0	187.0	185.0	211.0	194.0	202.0
13	184.1	120.5	239.9	139.7	169.8	95.8	21.9	*
14	477.4	432.4	427.1*	440.4*	298.4	289.9	242.1	493.2
15	167.2	147.6	849.0	174.4	58.4	91.9	63.2	29.1

TABLE C-79

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BENZO(K)FLUORANTHENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
LAB NUMBER								
1	4.3	4.8	3.0	2.7	2.1	2.7	6.3	2.8
2	4.6	7.4	8.3*	6.8*	0.0*	0.0*	11.2	8.5
3	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.7
4	7.6	5.2	5.0	3.9	9.1	3.5	0.9	2.4
5	6.7	6.0	7.0	5.6	0.0*	*	6.2	0.0*
6	0.0*	0.0*	0.0*	0.0*	3.3	0.0*	0.0*	0.0*
7	2.2	2.3	3.4	2.8	0.6	1.9	0.0*	6.6
8	2.7	1.5	0.0*	0.0*	0.0*	0.8	0.0*	1.2
9	7.4	4.8	4.6	4.5	4.1	6.4	4.0	5.1
10	7.2	1.7	4.7*	6.9*	2.9	9.6	7.0	0.9
11	5.6	4.5	2.7	4.1	5.3	4.9	6.1	3.5
12	7.3	7.6	9.0	7.4	7.5	6.9	8.0	8.0
13	6.4	4.5	5.6	0.0*	4.4	8.2	4.6	*
14	2.3	7.7	6.2	4.4	3.3	7.2	11.1	3.5
15	0.5*	1.1*	2.0	1.5	0.7	0.5	1.6	0.7

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TABLE C-80

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BENZO(K)FLUORANTHENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
LAB NUMBER								
1	12.7	47.3	21.5	26.7	36.1	17.0	32.9	38.3
2	88.1	62.3	68.5*	53.9*	55.1	32.2	40.3	47.6
3	9.6	10.7	7.0*	3.9*	4.1*	3.9*	6.2	6.7
4	43.9	62.4	7.8	3.9	21.4	6.8	23.4	3.4
5	48.9	54.1	36.3	26.9	38.2	35.4	0.2	118.0*
6	50.1	36.2	30.6	25.4	17.8	29.2	0.7*	10.7
7	32.5	22.8	18.8	18.0	12.6	10.4	42.0	57.1
8	27.1	20.6	1.3*	13.9*	8.2	8.6	6.6	9.1
9	46.9	44.0	26.1	31.2	24.9	47.9	42.6	16.9
10	77.3	64.2	55.8*	45.9*	55.0	33.0	53.4	36.9
11	37.8	35.5	18.4	19.5	32.7	30.1	18.9	21.6
12	52.5	56.7	46.6	43.5	41.9	37.7	57.3	55.3
13	39.7	47.6	37.6	35.9	83.0	28.4	17.0	*
14	65.3	55.6	40.8	29.5	37.9	24.5	34.6	29.4
15	9.3*	4.2*	32.3	8.2	3.7	5.1	7.6	0.9

TABLE C-81

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BENZO(K)FLUORANTHENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
LAB NUMBER								
1	491.0	440.0	353.0	486.0	490.0	499.0	263.0	459.0
2	545.9	538.7	526.7*	523.8*	475.7	547.7	389.7	443.8
3	0.0*	634.0	54.4*	99.6*	60.6*	114.7*	131.8	93.0
4	1050.0*	763.0	266.0	261.0	207.0	35.5	77.5	332.0
5	358.0	447.0	504.0	376.0	269.0	343.0	53.7	245.0
6	384.0	222.0	396.0	390.0	446.0	253.0	196.0	124.0
7	558.0	511.0	545.0	618.0	29.6	539.0	621.0	635.0
8	330.1	316.5	315.9*	261.7*	164.5	266.1	175.1	258.0
9	587.0	358.0	506.0	689.0	634.0	595.0	592.0	532.0
10	679.0	836.0	679.0*	603.0*	729.0	809.0	697.0	606.0
11	415.0	414.0	366.0	381.0	332.0	374.0	335.0	364.0
12	393.0	450.0	415.0	412.0	0.0*	439.0	358.0	450.0
13	609.0	429.5	530.8	480.7	625.0	324.4	82.7	*
14	593.6	515.8	533.3	531.0	391.8	456.1	424.4	673.4
15	50.3*	138.1*	291.8	116.9	214.7	65.5	254.1	5.7

TABLE C-82

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BENZYL BUTYL PHTHALATE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
LAB NUMBER								
1	6.9	3.3	6.4	7.8	7.0	7.2	6.3	6.3
2	0.0*	2.2	4.0	3.0	0.0*	0.0*	5.7	5.7
3	2.7	3.4	3.3	1.6	0.0*	0.0*	0.0*	0.0*
4	2.0	1.2	2.4	2.4	3.9	0.9	2.6	2.4
5	6.0	7.0	17.8	5.0	6.3	*	34.8*	10.0
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	3.8	4.7	6.0	3.6	6.6	5.7	10.0	7.7
8	1.1	0.5	1.0	0.0*	1.1	2.4	2.2	1.8
9	1.8	1.6	3.2	2.8	1.4	2.5	1.5	5.8
10	1.3	0.7	0.2	0.6	3.8	2.0	2.5	2.4
11	7.6	5.4	12.9	15.4*	12.9*	12.2*	14.7	7.6
12	1.4	1.4	1.8	1.3	1.3	2.2	1.7	1.9
13	10.0	0.0*	9.0*	6.9*	15.0*	10.8*	*	*
14	2.6	7.8	6.9	8.5	5.0	0.4	9.1	4.4
15	0.3	2.5	1.2*	0.3*	3.8	2.5	1.4	1.5

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TABLE C-83

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BENZYL BUTYL PHTHALATE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
LAB NUMBER								
1	32.8	40.8	31.4	53.3	56.2	50.5	19.0	51.4
2	34.4	22.0	28.8	32.3	57.8	10.5	20.2	28.2
3	31.0	29.7	27.3	18.9	18.8	18.1	12.3*	8.3*
4	11.7	14.6	10.1	12.5	13.4	11.9	41.8	10.8
5	26.9	5.3	16.8	33.4	31.2	47.8	6.8	76.8
6	6.5*	0.0*	3.0	7.3	1.7	8.3	3.7*	4.7*
7	54.3	40.5	35.4	30.8	42.7	42.7	53.8	56.2
8	6.5	2.5	0.0*	20.0	4.4	7.2	3.7	10.2
9	12.6	8.3	24.3	16.4	9.3	21.6	45.0	21.7
10	38.6	41.8	10.1	2.8	15.0	5.8	30.6	23.3
11	52.4	42.3	52.7	47.6	58.0*	55.5*	49.1	53.4
12	16.9	14.0	7.5	9.7	17.0	15.1	18.2	8.4
13	68.1	74.3	64.7*	70.5*	85.0*	104.9*	381.6*	765.8*
14	53.4	65.3	58.0	60.2	9.5	23.1	42.1	60.4
15	3.4	1.1	14.7*	1.7*	14.1	30.6	9.8	10.6

TABLE C-84

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BENZYL BUTYL PHTHALATE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
LAB NUMBER								
1	515.9	514.9	379.6	515.6	491.4	558.4	408.2	585.2
2	359.3	386.2	336.3	310.0	356.3	371.1	278.5	323.2
3	373.0	702.0	132.3	192.0	159.4	213.8	130.1*	121.0*
4	252.0	207.0	121.0	236.0	117.0	95.3	120.0	253.0
5	351.0	420.0	259.0	355.0	219.0	322.0	64.6	740.0
6	191.5*	92.8*	457.0	442.0	580.0	80.4	95.9*	72.3*
7	585.0	547.0	469.0	516.0	34.2	620.0	550.0	592.0
8	216.6	262.9	304.2	415.2	225.3	370.6	181.3	199.0
9	377.0	296.0	469.0	668.0	529.0	500.0	649.0	397.0
10	557.0	596.0	395.0	326.0	408.0	494.0	414.0	349.0
11	508.0	567.0	475.0	499.0	464.0*	517.0*	502.0	515.0
12	349.0	380.0	318.0	370.0	332.0	373.0	326.0	410.0
13	1297.1*	1096.7*	894.6*	981.6*	950.4*	694.8*	568.3*	*
14	464.2	421.8	549.8	457.2	320.1	306.8	409.4	506.6
15	81.2	154.7	67.4*	24.0*	295.4	223.8	165.1	58.0

TABLE C-85

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BIS(2-CHLOROETHOXY)METHANE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	12.0	11.0	12.0	11.0	12.0	11.0	12.0	11.0
LAB NUMBER								
1	1.4	4.6	0.5	0.0*	6.8	1.6	12.0	1.3
2	8.7	3.4	3.3	3.0	3.8	3.8	3.9	13.1
3	5.9	7.6	2.2	1.9	4.2	0.0*	12.7	17.5
4	12.4	5.9	16.4	9.5	11.0	14.6	15.4	21.3
5	7.8	9.0	12.3	9.7	8.9	*	*	*
6	0.0*	14.0	0.0*	0.0*	0.0*	3.7	9.7	19.3
7	8.1	9.5	12.8	10.1	10.5	11.3	16.7	17.4
8	7.4	8.0	7.3	7.2	8.3	9.1	11.5	8.2
9	13.1	9.1	3.2	15.3	16.6*	13.2*	8.7	*
10	9.2	2.2	9.4	8.0	11.0*	12.9*	14.2	5.2
11	0.0*	0.0*	0.0*	4.3	0.0*	0.0*	0.0*	0.0*
12	11.1	11.7	10.5	11.9	8.1	12.6	12.3	13.7
13	14.3	0.0*	0.0*	4.6	0.0*	0.0*	34.6*	*
14	1.0	1.2	0.0*	0.0*	2.0	2.2	2.5	14.7
15	0.0*	0.1*	8.8	0.3	10.9	8.7	8.8	6.1

TABLE C-86

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BIS(2-CHLOROETHOXY)METHANE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	79.0	77.0	79.0	77.0	79.0	77.0	79.0	77.0
LAB NUMBER								
1	76.3	61.9	67.3	68.0	106.0	69.7	55.0	47.9
2	126.9	105.1	61.6	90.1	34.5	6.8	99.3	111.3
3	111.1	112.2	70.1	67.1	63.0	53.7	103.7	89.0
4	67.0	82.3	83.1	65.7	87.3	84.7	148.0	53.9
5	64.8	62.0	82.4	50.6	36.8	71.7	*	*
6	87.1	59.7	35.4*	60.9*	47.7	58.4	85.4	82.3
7	85.0	91.6	51.7	99.7	97.2	80.4	93.7	89.9
8	84.3	90.2	169.2*	89.0	72.2	59.5	96.1	75.7
9	74.3	62.4	104.0	95.4	111.0*	87.1*	9.2	57.1
10	112.0	90.3	134.0*	99.7	112.0*	108.0*	92.5	93.3
11	140.0	109.0	80.8	105.0	125.0	115.0	121.0	95.4
12	72.5	80.0	90.1	73.4	81.8	75.3	82.2	77.3
13	18.6	79.7	51.5	54.7	127.9	64.7	144.7	*
14	72.1	79.4	78.1	49.3	79.3	68.5	77.7	74.0
15	8.8*	31.5*	72.1	13.3	62.2	112.0	59.8	30.7

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TABLE C-87

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BIS(2-CHLOROETHOXY)METHANE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	617.0	646.0	617.0	646.0	617.0	646.0	617.0	646.0
LAB NUMBER								
1	612.0	768.0	453.8	579.8	757.0	713.0	519.0	482.0
2	882.8	933.3	776.8	811.6	731.0	715.6	496.0	647.7
3	664.4	662.4	496.4	556.4	430.4	464.0	551.0	555.0
4	793.0	768.0	684.0	749.0	684.0	369.0	466.0	656.0
5	412.0	520.0	709.0	463.0	339.0	432.0	172.0*	349.0*
6	593.4	279.4	419.1*	445.1*	597.1	331.1	372.0	530.0
7	669.0	749.0	794.0	746.0	69.9	723.0	782.0	905.0
8	662.4	0.0*	840.1	975.2	527.7	663.7	607.0	741.6
9	821.0	554.0	896.0	940.0	1030.0*	759.0*	1150.0	562.0
10	972.0	971.0	1410.0*	1150.0	1200.0*	1130.0*	757.0	720.0
11	783.0	872.0	754.0	745.0	665.0	760.0	652.0	755.0
12	675.0	800.0	713.0	743.0	694.0	762.0	713.0	834.0
13	525.1	422.7	540.7	561.7	737.8	501.6	320.9	*
14	570.5	560.9	501.5	528.9	463.1	469.5	579.3	606.5
15	283.2*	189.5*	319.0	278.9	341.4	667.4	227.4	503.4*

TABLE C-88

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BIS(2-CHLOROISOPROPYL)ETHER ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	14.0	15.0	14.0	15.0	14.0	15.0	14.0	15.0
LAB NUMBER								
1	11.6	13.6	16.8	10.4	9.0	15.4	11.8	9.1
2	1.9	12.6	11.5	8.9	13.8	15.8	12.1	18.3
3	12.7	13.4	8.3	5.7	4.3	5.3	0.0*	15.3
4	16.3	24.8	17.3	9.2	14.6	23.2	31.7*	20.4
5	8.4	16.0	15.9	12.9	27.0	*	*	10.1
6	10.4	15.3	11.5	9.3	8.5	7.4	12.6	0.0*
7	7.8	12.1	13.1	12.1	8.2	12.2	14.7	14.0
8	15.0	12.1	14.9	1.6	14.6	13.4	15.6	12.9
9	35.8*	20.5*	21.6*	28.1*	27.0*	33.2*	13.1	14.4
10	11.8	6.1	10.3	12.6	15.8	11.7	12.2	4.2
11	12.4	19.9	17.2	13.4	15.9	14.9	16.2	16.4
12	0.0*	16.1	0.0*	16.0	15.8	15.5	16.3	16.3
13	0.0*	0.0*	9.6	5.4	0.0*	0.0*	*	*
14	9.9	11.9	0.0*	0.0*	11.4	8.6	14.9	14.7
15	6.2*	0.0*	5.6*	6.0*	0.0*	9.0*	3.5*	4.0*

TABLE C-89

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BIS(2-CHLOROISOPROPYL)ETHER ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	79.0	81.0	79.0	81.0	79.0	81.0	79.0	81.0
LAB NUMBER								
1	73.9	53.4	61.0	65.7	116.0	69.4	33.8*	41.3
2	99.1	87.1	80.0	81.5	76.2	94.2	96.4	96.0
3	105.9	108.4	67.5	67.2	59.4	50.8	90.8	79.4
4	114.0	82.9	66.8	23.6	75.3	71.8	73.1	31.1
5	64.9	89.0	92.3	68.4	44.2	97.8	*	*
6	80.6	63.3	40.2	69.7	38.7	83.0	0.0*	52.6
7	92.0	79.6	75.4	96.2	58.2	69.9	80.4	84.4
8	76.5	82.5	138.0*	92.2	66.9	59.9	81.9	66.1
9	102.0*	159.0*	117.0*	100.0*	146.0*	150.0*	228.0*	60.4
10	91.7	18.0*	95.5	81.6	66.0	87.1	69.3	89.2
11	89.8	75.7	67.6	79.2	67.6	71.8	70.7	66.6
12	58.4	69.7	73.7	73.3	69.9	68.2	71.3	64.8
13	105.9	76.3	40.7	63.8	124.1	61.2	*	*
14	72.1	69.5	81.7	38.9	49.3	64.3	75.5	76.7
15	27.0*	54.2*	41.0*	25.7*	37.1*	0.0*	27.8*	19.2*

TABLE C-90

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BIS(2-CHLOROISOPROPYL)ETHER ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	508.0	499.0	508.0	499.0	508.0	499.0	508.0	499.0
LAB NUMBER								
1	444.0	502.0	372.0	429.0	673.0	613.0	418.0	337.0
2	659.8	647.5	598.1	534.4	555.9	494.5	471.5	625.5
3	646.6	477.0	375.5	463.9	327.5	341.8	314.5	449.0
4	442.0	564.0	315.0	247.0	445.0	276.0	283.0	352.0
5	324.0	380.0	599.0	0.0*	262.0	0.0*	*	549.0
6	472.0	213.0	349.0	303.0	496.0	204.0	295.0	453.0
7	662.0	544.0	681.0	677.0	33.6	507.0	549.0	698.0
8	582.7	518.0	713.0	710.9	462.2	491.6	460.1	534.1
9	1510.0*	579.0*	1130.0*	816.0*	1060.0*	962.0*	1700.0*	638.0
10	539.0	509.0	698.0	591.0	679.0	502.0	455.0	464.0
11	624.0	603.0	599.0	584.0	413.0	462.0	510.0	546.0
12	401.0	452.0	426.0	465.0	467.0	446.0	431.0	498.0
13	943.3	133.8	785.1	361.9	518.0	274.8	*	63.8*
14	403.5	335.8	408.9	276.5	362.9	263.0	729.8	554.1
15	373.4*	226.4*	161.8*	227.1*	164.4*	0.0*	34.7*	98.4*

TABLE C-91

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BIS(2-ETHYLHEXYL)PHTHALATE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
LAB NUMBER								
1	7.6	5.4	2.2	4.2	2.8	2.9	3.0	5.3
2	6.4	8.0	4.9	4.4	0.0*	0.0*	6.7	4.1
3	2.8	1.2	0.0*	1.8	0.0*	0.0*	1.1	2.0
4	6.0	6.4	0.4	0.2	2.4	0.0*	2.1	0.8
5	6.6	7.6	2.7	0.0*	1.9	*	49.8*	6.0
6	33.2*	3.3	0.0*	0.0*	0.0*	0.0*	2.7	4.6
7	0.0*	1.5	2.2	1.0	1.5	0.0*	3.0	1.2
8	9.8	5.0	2.1	1.7	0.0*	1.0	1.9	1.2
9	8.7	5.7	1.4	1.9	3.3*	6.0*	1.7	2.4
10	7.1	1.1	2.2	4.5	6.9*	2.3	0.9	0.0*
11	3.5	3.7	0.0*	0.0*	0.0*	0.6	0.0*	0.0*
12	6.9	6.9	12.9*	6.9	2.8	2.6	5.7	21.4*
13	6.0	0.7	3.1	0.0*	3.6	2.5	*	0.0*
14	2.8	6.4	3.4	1.0	0.0*	0.0*	6.9	2.2
15	1.0*	1.3*	3.6	1.2	0.0*	0.0*	0.0*	0.0*

TABLE C-92

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BIS(2-ETHYLHEXYL)PHTHALATE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
LAB NUMBER								
1	11.2	43.0	13.1	14.0	10.8	10.0	4.1	16.2
2	83.9	69.7	56.0	47.9	33.9	16.3	15.8	16.9
3	12.4	23.4	2.3	2.6	0.7*	0.1*	7.6	5.5
4	43.6	55.0	1.6	1.1	13.1	1.1	11.5	1.7
5	49.1	10.9	15.3	14.8	29.8	19.8	0.2	79.9*
6	36.1	25.9	0.0*	0.0*	3.2	9.0	10.6	8.9
7	33.6	26.9	14.8	20.6	10.5	8.6	25.8	38.9
8	52.5	58.4	0.0*	11.8	3.9	2.3	6.0	5.2
9	53.3	54.3	25.1	35.4	23.3*	53.5*	25.5	10.6
10	59.6	75.5	42.5	32.3	25.3	29.8	33.3	20.2
11	37.8	31.7	12.0	43.6	18.7	16.3	5.5	13.2
12	46.9	50.8	33.7	44.9	30.0	29.1	56.5	48.1
13	3.7	41.4	12.6	14.7	20.9	13.4	82.3*	*
14	64.3	58.0	51.1	33.2	8.6	13.9	30.3	26.8
15	18.5*	15.9*	95.5*	14.1	0.0*	0.0*	0.0*	0.0*

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TABLE C-93

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR BIS(2-ETHYLHEXYL)PHTHALATE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
LAB NUMBER								
1	508.0	525.0	312.3	485.3	466.8	475.8	198.7	428.7
2	434.8	429.3	402.8	422.4	343.1	398.8	235.6	361.1
3	257.0	625.0	67.8*	123.6	78.4*	131.4*	130.2	105.0
4	549.0	516.0	282.0	278.0	170.0	142.0	159.0	489.0
5	350.6	449.6	450.5	384.5	259.9	346.9	203.0	615.0
6	353.6	203.6	437.1	299.1	593.5	206.5	172.0	166.0
7	648.0	725.0	540.0	510.0	22.4	588.0	480.0	593.0
8	537.4	697.9	520.5	585.3	358.8	504.4	197.7	528.3
9	694.1	441.1	644.4	894.4*	787.0*	689.0*	691.6	562.6
10	526.5	473.5	460.8	444.8	527.4	413.4	363.5	332.5
11	484.0	524.0	444.0	463.0	392.1	427.1	413.0	449.0
12	325.0	382.0	384.0	366.0	352.0	368.0	343.0	395.0
13	175.1	442.6	399.4	407.0	419.7	248.6	120.0	*
14	571.0	543.0	492.6	524.6	362.8	451.3	494.1	622.9
15	145.6*	2.6*	507.7	164.3	395.8	214.3	258.0*	37.6*

TABLE C-94

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR CHRYSENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	6.0	5.4	6.0	5.4	6.0	5.4	6.0	5.4
LAB NUMBER								
1	3.9	4.6	2.8	2.4	2.3	2.5	7.0	2.7
2	5.3	6.5	6.3	5.7	0.0*	0.0*	7.4	4.9
3	2.2*	2.0*	1.7*	0.0*	0.0*	0.0*	0.0*	0.0*
4	4.4	2.3	2.6*	2.1*	7.0	2.1	1.0	2.3
5	4.5	3.0	4.3	3.6	3.7	*	43.5*	7.9
6	3.3	5.8	3.5	3.8	4.0	3.5	1.8	0.8
7	3.6	3.1	3.5	3.1	3.0	3.2	12.6*	14.0*
8	5.5	3.2	5.0	0.5	1.6	1.9	2.6	2.5
9	7.2	4.8	3.6	5.0	5.6*	6.8*	5.1	4.6
10	4.4	1.7	2.8	7.1	5.0*	8.1*	8.0	1.6
11	3.4	4.9	3.2	3.5	4.1	3.9	3.6	3.0
12	4.4	4.6	5.6	4.8	4.9	4.6	4.8	5.2
13	5.9	0.0*	5.6	4.4	4.6	5.4	19.3*	*
14	2.8	4.3	6.0	5.0	5.3	5.6	8.1	4.6
15	0.7*	3.4*	3.8	0.9	2.1	3.2	2.6	1.8

TABLE C-95

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR CHRYSENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	45.0	43.0	45.0	43.0	45.0	43.0	45.0	43.0
LAB NUMBER								
1	23.0	51.2	27.0	30.8	38.6	22.6	39.0	32.0
2	68.2	45.4	50.8	38.8	43.7	26.2	31.8	35.7
3	8.3*	15.0*	3.8*	4.2*	5.5*	4.6*	3.9*	4.7*
4	27.4	37.6	10.0*	7.8*	15.4	4.8	32.8	2.2
5	32.9	30.4	27.9	19.3	24.8	25.5	*	*
6	47.2	31.2	32.8	28.3	20.6	36.9	7.4	15.9
7	29.8	25.5	18.9	19.6	14.8	14.8	39.6*	47.1*
8	56.1	38.1	0.0*	44.3	19.7	18.5	25.1	24.4
9	41.7	42.4	19.2	33.7	26.5*	48.5*	46.4	23.8
10	57.4	46.5	40.1	31.5	46.5*	34.1*	53.0	30.3
11	28.5	24.6	19.8	20.9	25.6	27.4	17.4	19.7
12	31.6	33.8	32.9	29.8	29.5	26.7	35.1	33.4
13	9.3	46.5	35.0	37.5	59.9	32.0	35.6	*
14	49.1	44.6	34.9	34.7	36.9	22.7	35.9	30.2
15	25.3*	8.5*	50.1	8.3	20.6	11.4	13.8	8.8

TABLE C-96

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR CHRYSENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	384.0	411.0	384.0	411.0	384.0	411.0	384.0	411.0
LAB NUMBER								
1	474.0	364.0	276.0	353.0	365.0	433.0	224.0	458.0
2	375.9	375.9	357.7	358.5	328.7	382.2	285.9	333.7
3	138.1*	331.4*	34.8*	57.1*	39.3*	69.3*	90.7*	52.6*
4	279.0	481.0	159.0*	205.0*	45.2	64.5	36.1	178.0
5	214.0	280.0	304.0	258.0	193.0	227.0	14.4	*
6	306.1	170.0	324.0	312.0	355.0	198.0	145.0	106.0
7	418.0	427.0	384.0	399.0	22.3	404.0	384.0*	482.0*
8	638.5	541.3	773.3*	0.0*	222.8	337.4	261.8	503.4
9	538.0	328.0	444.0	387.0	546.0*	538.0*	513.0	501.0
10	497.0	591.0	489.0	436.0	554.0*	627.0*	566.0	375.0
11	288.0	303.0	259.0	277.0	235.0	273.0	245.0	209.0
12	246.0	283.0	263.0	258.0	251.0	276.0	260.0	282.0
13	153.1	392.5	391.7	375.2	365.9	231.6	111.8	*
14	424.5	396.9	398.8	395.3	343.0	364.9	350.5	447.5
15	53.7*	246.8*	319.5	62.1*	257.8	133.7	158.2	39.1

TABLE C-97

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR D-BHC ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
LAB NUMBER								
1	0.6	1.5	1.9	1.8	1.7	1.9	5.7	6.9
2	0.0*	0.0*	0.0*	0.0*	0.0*	1.5	0.0*	0.0*
3	0.0*	2.1	4.2	0.8	0.0*	0.0*	0.0*	0.0*
4	0.0*	0.0*	0.0*	0.2	0.0*	0.0*	0.3	0.0*
5	8.6*	5.0*	3.1	3.1	4.9	*	*	*
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	3.6*	4.2*	5.2*	4.2*	5.6	5.4*	9.0*	8.0*
8	1.1	0.3	0.0*	0.0*	0.0*	0.8	0.0*	2.0
9	0.0*	0.0*	0.0*	1.0	0.0*	1.2	0.9	4.6
10	0.3	0.1	0.3	0.3	0.0*	0.8	2.9	1.5
11	4.6*	4.0*	3.4	4.1	5.7*	7.0*	5.5	4.4
12	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	0.4	3.5	6.0*	4.8*	3.8	0.0*	5.8	2.1
15	0.0*	0.0*	0.8	0.0*	0.0*	0.0*	1.3	0.0*

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TABLE C-98

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR D-BHC ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
LAB NUMBER								
1	13.1	31.6	56.9	45.6	42.3	37.5	42.8	53.0
2	1.0	0.9	1.0	0.7	1.1	1.1	1.2	1.2
3	31.7	23.0	29.2	20.7	0.0*	19.2	17.4	16.5
4	0.0*	0.0*	0.7	1.1	0.0*	5.0	26.4	4.2
5	37.9*	41.2*	26.2	23.7	16.3	35.6	*	*
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	56.7*	46.0*	44.9*	39.3*	52.3	47.9	66.1*	58.2*
8	1.5	0.0*	1.4	1.6	0.0*	8.3	0.0*	3.8
9	3.0	0.0*	14.8	14.5	4.6	17.3	44.3	28.1
10	6.3	3.4	2.4	1.6	10.8	1.8	20.3	21.1
11	43.9*	42.3*	44.4	41.3	44.2*	43.0*	47.0	39.6
12	19.5	16.3	13.0	9.8	13.0	0.1	9.8	16.2
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	25.2	40.2	51.4*	39.3*	3.3	15.3	34.9	40.9
15	0.3*	1.6	10.2	0.6	10.8	0.0*	14.0	14.1

TABLE C-99

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR D-BHC ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	511.0	547.0	511.0	547.0	511.0	547.0	511.0	547.0
LAB NUMBER								
1	340.0	261.0	335.0	410.0	394.0	422.0	449.0	485.0
2	13.0	14.0	12.0	13.0	13.0	13.0	12.0	14.0
3	329.0	245.6	199.1	266.7	128.6	188.6	160.2	162.0
4	89.5	14.3	11.8	131.0	10.0	6.7	34.7	89.0
5	394.0*	610.0*	272.0	463.0	397.0	422.0	63.6	298.0
6	30.6	55.6	119.0	1000.0*	915.0*	185.0	0.0*	0.0*
7	585.0*	502.0*	475.0*	554.0*	35.3	581.0	568.0*	663.0*
8	13.3	12.6	10.3	13.3	8.1	9.3	9.3	11.4
9	232.0	174.0	305.0	407.0	355.0	300.0	543.0	398.0
10	204.0	209.0	133.0	168.0	123.0	187.0	204.0	199.0
11	458.0*	511.0*	441.0	442.0	440.0*	468.0*	463.0	483.0
12	218.0	283.0	235.0	248.0	240.0	280.0	250.0	267.0
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	434.1	349.3	492.9*	443.9*	181.0	124.1	202.9	527.9
15	6.2	10.1	94.5	4.9	101.3	32.8	80.0	100.1

TABLE C-100

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR DI-N-OCTYLPHTHALATE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
LAB NUMBER								
1	6.4	5.5	1.7	4.6	2.3	1.9	3.2	1.4
2	8.5	10.0	3.8	3.5	0.0*	0.0*	4.4	3.2
3	1.0	0.0*	0.0*	0.0*	0.0*	0.0*	0.6	0.5
4	5.1	6.0	0.4	0.3	3.1	0.0*	0.3	0.3
5	6.1	6.0	1.7	1.3	2.2	*	9.3	*
6	4.0	0.0*	0.0*	0.0*	0.0*	0.0*	1.9	2.6
7	0.6	0.0*	2.0	0.0*	1.6	1.0	4.3	3.7
8	11.8	4.6	1.4	1.6	0.0*	0.0*	0.0*	0.4
9	8.9	6.2	1.1	2.1	9.5*	3.0*	1.2	1.6
10	4.0	1.9	2.0	3.1	2.9	3.9	2.1	0.4
11	2.8	2.1	7.2*	9.0*	4.4	4.0	6.0	1.5
12	6.3	6.3	2.9	1.8	2.0	2.0	3.9	3.8
13	4.2	0.5	2.2	0.0*	1.3	2.3	*	246.0*
14	0.5	5.7	2.4	0.9	1.8	0.7	7.6	1.6
15	1.0*	0.0*	3.1	0.7	2.5	2.4	0.3	0.0*

TABLE C-101

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (E) **

RAW DATA FOR DI-N-OCTYLPHTHALATE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
LAB NUMBER								
1	9.9	39.5	10.6	10.5	7.5	6.6	3.7	9.9
2	82.8	70.4	54.6	46.4	31.9	16.5	13.0	13.6
3	10.7	18.7	1.4*	0.6*	0.0*	0.8*	4.0	3.5
4	41.9	48.5	3.9	1.3	25.1	0.0*	8.2	1.3
5	49.6	52.5	15.5	15.5	26.1	16.6	*	33.2
6	25.8	16.3	20.7	5.8	1.4	5.2	11.9	7.2
7	28.1	18.8	12.0	12.2	10.2	7.7	29.1	37.4
8	54.4	55.9	13.6	9.5	4.0	2.6	4.7	3.1
9	54.7	55.4	25.5	31.2	19.9*	51.2*	23.7	10.9
10	65.5	60.6	41.9	31.6	30.7	29.6	39.6	25.6
11	29.8	19.2	11.1	7.6	19.4	18.1	5.2	15.7
12	46.4	50.9	23.3	32.6	30.2	28.2	52.7	47.5
13	6.0	34.2	14.6	13.9	17.2	0.0*	67.7	442.2*
14	60.1	55.9	36.6	23.4	17.5	21.1	27.6	20.4
15	13.0*	17.4*	106.6*	12.7	3.3	4.4	0.8	1.0

TABLE C-102

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR DI-N-OCTYLPHTHALATE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
LAB NUMBER								
1	461.0	508.0	274.0	449.0	417.0	404.0	167.0	371.0
2	371.2	364.8	338.3	358.8	238.5	337.2	209.7	244.2
3	176.2	457.0	55.4*	93.3*	57.9*	92.9*	161.4	80.0
4	512.0	473.0	232.0	217.0	162.0	61.9	135.0	241.0
5	334.0	430.0	46.3	382.0	272.0	331.0	57.3	473.0
6	410.9	206.9	741.9	412.9	874.8	255.8	231.0	249.0
7	545.0	566.0	476.0	484.0	19.9	545.0	504.0	546.0
8	360.6	378.6	413.1	443.8	299.7	454.3	175.7	340.8
9	709.0	449.0	62.9	940.0*	765.0*	730.0*	700.0	622.0
10	495.0	488.0	444.0	421.0	506.0	420.0	389.0	353.0
11	323.0	337.0	301.0	213.0	276.0	320.0	284.0	307.0
12	331.0	335.0	374.0	330.0	342.0	374.0	341.0	359.0
13	257.6	392.1	417.5	427.7	417.9	259.6	*	*
14	577.7	533.3	560.5	514.7	391.0	479.6	515.3	639.9
15	202.8*	231.4*	1169.2*	196.1	786.0	174.6	403.1	56.0

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TABLE C-103

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - P/N (2) **

RAW DATA FOR DIELDRIN ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	5.0	7.2	5.0	7.2	5.0	7.2	5.0	7.2
LAB NUMBER								
1	6.6	4.3	6.9	4.8	5.0	6.5	6.2	8.1
2	8.1	9.2	7.1	5.2	5.3	6.6	7.2	8.5
3	6.8	5.8	4.8*	2.8*	4.7*	4.4*	0.0*	0.0*
4	5.9	5.7	5.8	4.9	6.4	5.5	7.9	5.8
5	12.7*	6.0	13.8*	6.3	6.9	*	*	2.0
6	5.8	6.4	6.2	5.2	6.9	4.9	2.6*	1.6*
7	3.9	4.3	5.0	3.9	4.9	4.4	7.4	8.0
8	9.6	6.3	10.0*	14.6*	6.8	5.6	6.7	6.6
9	13.4*	9.6*	11.2*	11.5*	11.4*	12.1*	6.9	10.7
10	6.0	2.9	5.8	6.4	6.7	5.9	6.4	2.1
11	7.0	6.3	5.8	6.6	8.3	7.2	8.1	6.5
12	5.9	6.1	7.1	6.2	6.7	6.5	6.1	6.7
13	0.0*	0.0*	0.0*	4.8	0.0*	4.8	*	*
14	4.6	4.9	6.9	6.1	6.3	4.6	8.7	6.3
15	0.9*	1.3*	4.7	2.0*	4.5	4.7	4.5	2.6

TABLE C-104

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR DIELDRIN ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
LAB NUMBER								
1	45.0	44.2	50.7	44.9	55.5	48.4	29.6	50.7
2	69.0	56.0	66.0	57.0	63.0	51.0	40.0	46.0
3	39.1	45.1	28.1*	27.0*	29.0*	22.9*	11.2*	12.5*
4	43.0	37.8	30.2	23.6	42.1	32.2	31.5	26.6
5	91.7*	49.0	93.6*	43.1	28.1	52.4	*	64.8
6	59.3	40.9	46.0	45.3	33.4	53.2	11.5*	20.7*
7	42.9	37.0	33.1	36.4	34.8	31.4	40.6	43.3
8	64.5	55.6	95.9*	60.0*	50.6	35.7	49.6	39.1
9	71.2*	74.1*	68.7*	79.4*	73.3*	86.0*	81.6*	41.4
10	43.6	42.0	45.2	39.2	35.5	35.7	39.3	36.8
11	57.6	52.7	50.0	51.7	58.1	53.2	58.0	50.1
12	38.4	42.7	44.3	38.3	40.2	39.4	40.1	41.4
13	47.1	47.2	35.0	44.3	55.2	35.3	*	*
14	59.2	54.3	58.2	46.3	46.9	40.3	53.7	49.2
15	20.0*	15.3*	54.5	18.7	50.9	57.1	35.7	32.4

TABLE C-105

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR DIELDRIN ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
LAB NUMBER								
1	439.0	557.0	337.0	474.0	505.0	534.0	374.0	481.0
2	430.0	430.0	390.0	423.0	365.0	383.0	270.0	324.0
3	233.0	563.7	83.4*	112.1*	91.5*	104.5*	95.9*	71.9*
4	373.0	180.0	129.0	121.0	113.0	147.0	113.0	99.2
5	492.0	780.0	920.0*	560.0	418.0	511.0	69.2	542.0
6	374.0	201.0	374.0	399.0	444.4	196.0	176.0*	146.0*
7	396.0	401.0	367.0	374.0	28.3	371.0	365.0	409.0
8	589.6	632.8	579.9*	666.1*	446.1	488.1	288.6	524.7
9	850.0*	542.0*	862.0*	800.0*	809.0*	778.0*	858.0*	529.0
10	324.0	274.0	348.0	328.0	282.0	289.0	263.0	223.0
11	440.0	527.0	411.0	415.0	365.0	428.0	487.0	472.0
12	248.0	280.0	262.0	245.0	258.0	273.0	254.0	266.0
13	586.7	370.3	356.3	429.6	365.3	212.7	87.2*	*
14	465.0	435.8	505.7	445.2	340.8	381.3	469.4	469.3
15	136.1*	188.1*	423.7	160.8	369.3	270.0	308.0	155.3

TABLE C-106

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR DIMETHYL PHTHALATE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	5.0	4.5	5.0	4.5	5.0	4.5	5.0	4.5
LAB NUMBER								
1	0.6	2.7	1.6	1.8	1.5	1.6	4.9*	2.5*
2	0.0*	0.0*	0.5	0.0*	2.1	0.0*	0.0*	1.0
3	0.0*	0.0*	0.0*	0.5	0.0*	0.0*	0.0*	0.0*
4	0.7	0.0*	1.2	0.8	0.0*	0.0*	0.6	1.2
5	3.4	3.0	0.0*	0.4	3.5	*	*	2.2
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.8	0.5
7	2.3*	3.4*	3.8*	2.5*	3.2	3.2	4.8*	5.0*
8	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
9	3.0	0.9	0.7	1.5	0.2	1.4	0.3	3.9*
10	2.3	1.2	2.2	0.0*	0.0*	1.8	1.0	1.3
11	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
12	0.0*	0.0*	2.7	0.0*	0.0*	0.0*	0.0*	0.0*
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	0.0*	0.0*	4.7	0.0*	0.0*	0.0*	5.9*	1.0
15	0.0*	0.0*	0.8	0.2	0.0*	0.5	1.1	0.6

TABLE C-107

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR DIMETHYL PHTHALATE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	38.0	36.0	38.0	36.0	38.0	36.0	38.0	36.0
LAB NUMBER								
1	7.6	19.6	22.0	27.9	30.6	19.2	26.5*	30.3*
2	0.0*	0.6	0.0*	0.0*	25.8	1.0	1.1	3.6
3	13.5	10.0	13.0	8.5	6.3	6.8	16.0	12.4
4	6.2	6.5	4.4	4.5	2.5	4.7	30.4	5.2
5	10.6	9.8	3.7	9.7	9.2	18.8	0.8	28.4
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	3.2	4.1
7	32.5*	22.4*	23.1*	16.0*	25.8	24.6	37.5*	27.1*
8	0.0*	0.0*	1.3	1.8	0.0*	0.9	0.0*	2.1*
9	2.7	0.6	3.7	6.2	1.6	7.2	18.1	12.2
10	0.7	8.9	0.3	4.9	1.9	0.0*	6.6	9.6
11	50.2*	44.7*	45.6*	40.8	45.8	46.1*	30.3	44.2
12	0.8	0.3	6.4	0.0*	0.3	1.4	0.5*	0.1*
13	0.0*	0.0*	10.2	5.3	14.0	21.2	*	*
14	15.3	25.9	30.0	28.1	0.3	0.0*	16.6	24.1
15	2.2	1.6	6.5	4.2	6.5	9.9	9.0	8.4

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TABLE C-108

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR DIMETHYL PHTHALATE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	320.0	343.0	320.0	343.0	320.0	343.0	320.0	343.0
LAB NUMBER								
1	199.0	118.0	208.0	241.0	260.0	266.0	280.0*	252.0*
2	1.6	10.8	1.5	6.4	41.7	5.3	21.9	24.0
3	108.4	89.3	78.6	109.6	63.8	67.9	96.9	101.0
4	54.7	45.2	32.3	88.1	23.3	29.3	46.1	46.6
5	131.0	169.0	53.2	104.4	105.0	132.0	87.4	250.0
6	0.0*	19.9	19.4	118.0	38.6	21.4	30.2	17.9
7	265.0*	173.0*	167.0*	281.0*	21.0	300.0	338.0*	330.0*
8	5.6	9.1	9.1	4.7	10.7	28.2	16.0*	1.2*
9	5.9	28.6	68.0	88.1	37.4	41.2	173.0	61.9
10	3.9	11.6	3.4	55.4	4.9	11.5	49.0	102.0
11	314.0	283.0*	301.0	296.0	263.0	293.0	242.0	287.0
12	4.3	13.2	0.8	1.6	0.0*	9.3	2.6*	7.3*
13	148.4	53.5	99.9	123.7	144.7	141.6	32.4*	*
14	223.3	75.1	273.6	222.2	124.9	0.2	10.6	253.0
15	12.6	23.8	73.8	32.2	0.4	248.7	17.8	69.4

TABLE C-109

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR ENDRIN ALDEHYDE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	22.0	25.0	22.0	25.0	22.0	25.0	22.0	25.0
LAB NUMBER								
1	25.8	23.0	12.6	14.6	19.4	35.9	12.9	21.0
2	0.0*	0.0*	0.0*	0.0*	*	0.0*	*	*
3	22.0	24.4	7.9	1.1	12.2	13.6	0.0*	6.1
4	8.8	4.8	3.6	10.9	13.5	15.0	14.2	15.4
5	17.1	21.0	11.8	16.3	18.0	*	*	*
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	2.8	3.7	1.7	5.3	4.5	4.8	4.3	3.1
8	2.2	0.0*	0.0*	0.0*	0.0*	0.0*	1.5*	1.0*
9	631.0*	921.0*	180.0*	750.0*	235.0*	957.0*	293.0*	871.0*
10	5.3	3.9	5.5	8.5	6.7	7.3	5.1	2.4
11	18.0	20.2	18.4	21.9	22.4	25.5	25.0	22.9
12	0.0*	6.1	3.5	3.1	0.0*	1.3	1.5	2.3
13	0.0*	0.0*	0.0*	0.0*	0.0*	18.4*	*	*
14	19.9	23.4	16.4	15.5	19.7	17.6	24.9	24.9
15	4.3	30.1	15.9	4.6	0.0*	12.9	4.0	0.0*

TABLE C-110

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR ENDRIN ALDEHYDE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	119.0	125.0	119.0	125.0	119.0	125.0	119.0	125.0
LAB NUMBER								
1	161.1	111.0	75.7	106.0	0.0*	179.0	49.5	162.0
2	0.0*	0.0*	*	0.0*	*	0.0*	*	*
3	135.3	151.0	23.7	12.4	83.2	78.2	25.0	28.4
4	35.5	34.6	28.0	31.4	44.3	75.6	64.0	59.7
5	32.2	105.0	77.2	55.2	67.5	90.3	*	0.0*
6	325.0*	251.3	244.0	0.0*	402.0*	326.0*	0.0*	126.0
7	28.5	31.1	32.0	26.2	35.8	34.3	22.2	34.2
8	1.2	8.0	0.0*	4.4*	1.2*	3.1*	1.8*	1.7*
9	3800.0*	2580.0*	844.0*	3010.0*	1100.0*	3950.0*	4200.0*	1510.0*
10	40.9	32.8	30.4	29.7	31.1	37.3	31.7	30.3
11	106.0	104.0	100.0	124.0	145.0	125.0	126.0	116.0
12	15.5	31.4	33.7	39.1	20.0	9.3	28.1	22.1
13	0.0*	0.0*	64.8	68.7	0.0*	0.0*	*	*
14	115.0	141.6	144.8	107.8	100.9	110.9	131.0	129.2
15	0.0*	83.0	159.0	25.4	80.3	83.3	21.8	19.2

TABLE C-111

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR ENDRIN ALDEHYDE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	658.0	611.0	658.0	611.0	658.0	611.0	658.0	611.0
LAB NUMBER								
1	609.0	891.0	363.0	466.0	988.0	886.0	852.0	539.0
2	0.0*	0.0*	0.0*	0.0*	*	0.0*	*	*
3	0.0*	1305.0	94.2	163.5	524.3	549.2	206.5	144.0
4	386.0	138.0	155.0	173.0	177.0	56.9	221.0	171.0
5	443.0	430.0	535.0	338.0	287.0	306.0	32.2	578.0
6	3340.0*	1040.0	3090.0*	2850.0*	4600.0*	2360.0*	956.0	592.0
7	224.0	196.0	183.0	262.0	13.1	224.0	177.0	259.0
8	0.0*	5.3	7.8*	8.0*	0.0*	5.5*	0.0*	5.7*
9	17500.0*	18600.0*	20100.0*	5610.0*	7980.0*	19400.0*	28300.0*	9940.0*
10	162.0	149.0	163.0	141.0	169.0	155.0	136.0	110.0
11	587.0	567.0	565.0	508.0	592.0	604.0	720.0	557.0
12	258.0	167.0	195.0	250.0	253.0	201.0	191.0	213.0
13	1124.0	0.0*	647.4	631.1	10.6*	0.0*	*	*
14	647.7	628.4	702.5	544.0	467.0	411.2	637.4	669.0
15	692.5	468.8	679.6	201.6	737.6	331.6	239.7	115.1

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR FLUORENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	6.0	5.4	6.0	5.4	6.0	5.4	6.0	5.4
LAB NUMBER								
1	5.0	5.2	5.9	4.6	5.0	6.2	6.0	13.3
2	0.4*	4.9	5.4	3.0	4.2	3.6	4.3	4.5
3	6.6	7.1	5.9	4.4	4.4	5.0	2.6	2.0
4	5.7	7.2	5.5	6.1	4.7	4.5	5.8	5.5
5	4.7	3.0	5.0	3.8	3.6	*	*	4.4
6	0.0*	0.0*	3.3*	1.8*	3.0*	3.7*	1.9*	1.3*
7	5.0	5.5	6.7	6.4	6.1	6.2	5.6	5.8
8	5.5	5.3	7.6*	8.9*	3.6	4.5	4.6	5.1
9	7.4	5.8	9.0*	7.0*	9.7*	7.7*	5.4*	7.1*
10	5.3	2.2	4.8	7.7	6.7	5.5	5.8	1.5
11	3.5	3.8	4.0	3.8	4.3	3.8	4.3	3.0
12	5.6	5.5	0.2*	5.4	6.0	6.7	4.6	6.0
13	5.8	0.0*	4.5	2.7	5.1	3.1	31.4*	12.2
14	4.2	3.8	4.9	4.4	3.7	3.7	7.5	6.1
15	0.9*	1.7*	3.3*	1.7*	4.3	3.5	4.1	2.2

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TABLE C-113

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR FLUORENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	45.0	43.0	45.0	43.0	45.0	43.0	45.0	43.0
LAB NUMBER								
1	36.6	34.8	41.7	39.2	36.4	36.7	36.2	38.3
2	48.6	43.3	45.3	42.0	46.8	48.1	40.1	38.4
3	43.0	38.6	31.5	29.5	27.1	27.0	25.2	24.2
4	39.6	38.6	35.0	39.1	37.5	38.2	61.2*	38.4
5	36.6	33.2	37.6	24.5	19.5	31.3	*	*
6	11.5*	6.3*	12.4*	13.2*	13.6*	12.6*	9.6*	13.3*
7	40.2	40.5	38.7	42.6	40.8	37.7	40.6	36.3
8	46.9	40.4	47.8*	39.1*	26.7	24.1	27.2	29.2
9	43.1	38.6	59.3*	43.9*	60.2*	51.2*	51.0*	39.2*
10	45.8	44.2	40.6	35.2	41.0	38.9	40.8	38.7
11	38.8	36.7	36.8	35.7	35.2	35.0	35.3	37.2
12	31.5	34.5	38.7	33.8	35.3	34.8	34.8	35.1
13	45.1	45.4	32.5	30.3	55.6	33.1	39.0	*
14	36.3	37.0	40.7	29.6	36.6	33.8	40.4	34.1
15	18.6*	16.3*	38.2*	18.1*	35.5	64.5*	33.4	18.2

TABLE C-114

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR FLUORENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	384.0	411.0	384.0	411.0	384.0	411.0	384.0	411.0
LAB NUMBER								
1	359.0	408.0	288.0	393.0	301.0	356.0	340.0	346.0
2	357.1	361.4	327.7	355.4	345.5	335.7	269.2	344.8
3	334.0	367.0	199.7*	220.5	172.7	193.8	170.9	169.0
4	366.0	399.0	354.0	399.0	362.0	348.0	330.0	376.0
5	250.0	310.0	373.0	293.0	200.0	272.0	40.1	266.0
6	119.2*	55.2*	112.0*	119.0*	121.0*	104.0*	103.0*	81.0*
7	305.0	331.0	335.0	352.0	28.2	325.0	324.0	335.0
8	350.5	405.0	381.7*	360.4*	267.2	328.9	351.7	375.6
9	519.0	343.0	452.0*	588.0*	557.0*	489.0*	562.0*	476.0*
10	384.0	350.0	393.0	360.0	412.0	387.0	290.0	292.0
11	323.0	372.0	318.0	318.0	279.0	316.0	304.0	347.0
12	255.0	347.0	300.0	256.0	294.0	328.0	298.0	309.0
13	509.6	296.6	324.2	308.7	343.4	187.4	109.0	*
14	313.4	402.7	366.5	299.4	373.7	369.0	415.0	334.5
15	133.9*	171.2*	185.8*	62.0*	242.8	541.4	198.5	133.6

TABLE C-115

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR HEPTACHLOR EPOXIDE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
LAB NUMBER								
1	4.2	4.0	3.7	3.0	2.4	2.7	4.5	2.8
2	6.2	6.3	5.6	3.8	4.6	2.7	3.2	2.6
3	4.1	0.0*	5.7	4.6	4.6	5.7	0.0*	0.0*
4	7.6	8.6	6.9	4.1.	6.7	5.8	5.3	6.5
5	13.0*	5.0	14.0*	7.5*	6.7	*	3.5	*
6	3.3	6.9	5.7	4.9	4.2	5.6	3.8	0.0*
7	3.8	3.5	4.6	4.7	4.9	4.7	5.0	4.6
8	4.0	3.3	0.0*	0.0*	0.0*	1.2*	1.0	4.3
9	7.3	0.0*	7.5	6.2	3.9	6.7	6.8	0.4
10	5.7	2.5	5.4	6.2	6.5	5.9	6.7	2.5
11	5.5	5.1	4.7	5.1	6.5	6.2	6.9	5.2
12	7.7	8.3	7.1	0.4	9.2	7.7	7.1*	8.5*
13	0.0*	0.0*	7.2	6.0	0.0*	9.3	0.0*	*
14	4.5	5.9	5.2	4.9	6.3	5.7	7.7	4.1
15	0.4	2.3	3.9	1.6	8.4	3.9	4.0	3.1

TABLE C-116

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR HEPTACHLOR EPOXIDE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
LAB NUMBER								
1	85.4	62.1	73.0	59.5	66.7	64.4	46.5	57.6
2	60.0	54.0	65.0	0.0*	57.0	59.0	23.0	24.0
3	48.1	37.0	38.4	44.4	37.7	43.9	12.9*	11.5*
4	69.2	60.5	47.3	36.7	47.7	47.4	61.5	35.0
5	111.0	47.4	105.0*	43.1*	35.5	57.8	*	22.7
6	11.9	64.9	80.5	79.9	57.2	54.7	16.2	49.9
7	48.6	47.4	45.9	42.0	46.6	43.7	50.1	42.1
8	43.2	45.4	0.0*	36.7*	11.4*	28.9*	44.3	29.3
9	54.1	45.8	73.2	50.5	66.6	60.5	7.9	57.7
10	41.9	40.2	44.8	38.1	35.4	35.0	40.5	36.3
11	45.4	42.9	41.3	42.2	47.6	43.2	50.5	40.1
12	57.9	63.2	76.7	54.2	63.8	59.5	58.3*	61.2*
13	48.6	60.2	41.3	46.5	77.4	39.5	*	*
14	56.1	48.7	45.8	41.3	66.6	48.6	51.6	45.5
15	57.1	12.6*	49.0	18.6	47.7	47.6	36.4	34.5

TABLE C-117

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - D/W (2) **

RAW DATA FOR HEPTACHLOR EPOXIDE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
ANNUAL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
LAB NUMBER								
1	636.0	1158.0*	636.0	792.0	757.0	920.0	614.0	609.0
2	530.0	560.0	560.0	560.0	520.0	522.0	312.0	336.0
3	307.0	225.0	107.0	111.0	96.1	140.7	104.0*	91.9*
4	731.0	454.0	318.0	294.0	363.0	360.0	150.0	269.0
5	611.0	937.0*	1020.0*	670.0*	446.0	607.0	51.9	275.0
6	812.0	293.0	689.0	968.0	638.0	477.0	449.0	236.0
7	517.0	550.0	485.0	615.0	33.4	544.0	490.0	528.0
8	598.4	455.6	354.1*	196.8*	139.2*	332.3*	316.7	556.3
9	599.0	449.0	574.0	775.0	598.0	626.0	73.7	759.0
10	329.0	283.0	363.0	350.0	295.0	315.0	285.0	240.0
11	375.0	452.0	353.0	356.0	324.0	370.0	421.0	410.0
12	416.0	475.0	452.0	399.0	432.0	471.0	435.0*	435.0*
13	409.7	455.1	449.9	489.1	450.7	236.0	*	*
14	457.4	418.6	375.4	398.6	369.9	418.7	354.3	457.6
15	362.8	598.5	398.8	194.2	379.4	246.5	320.6	191.9

TABLE C-118

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (P) **

RAW DATA FOR HEXACHLOROBUTADIENE ANALYSIS BY WATER TYPE
LOW POUDER PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
LAB NO:	1	2	1	2	1	2	1	2
TRUE CONC:	10.0	9.0	10.0	9.0	10.0	9.0	10.0	9.0
LAB NUMBER								
1	9.2	7.8	3.1	3.5	2.5	2.4	8.3	3.0
2	9.2	5.4	6.8	4.2	9.1	5.1	6.9	6.6
3	6.0	5.9	6.4	4.3	4.9	4.5	1.6	1.2
4	8.5	6.2	9.0	5.9	6.9	9.5	6.9	11.6
5	9.9	6.4	7.1	5.8	6.1	*	2.5	*
6	4.6	7.1	5.9	4.6	3.2	7.7	4.6	2.4
7	3.6	4.5	7.3	5.8	5.6	6.5	5.6	6.4
8	9.2	7.6	6.1	3.3	4.7	5.4	7.2	7.4
9	9.7	5.1	11.2*	7.2*	11.2*	8.6*	7.3*	8.2*
10	5.5	2.5	5.2	10.4	6.2	7.4	9.1	2.2
11	2.7	4.2	4.3	3.5	4.6	3.2	3.9	3.6
12	8.5	6.7	6.7	6.1	7.8	6.6	5.9	6.3
13	13.5	7.6*	4.6	6.5	6.3	3.5	*	*
14	9.6	5.5	2.7	6.6*	8.2	8.1	9.2	5.1
15	3.9	6.6*	5.6	1.5	5.5	5.1	5.7	4.1

TABLE C-119

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR HEXACHLOROBUTADIENE ANALYSIS BY WATER TYPE
MEDIUM: WOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
ANOVA OBS	3	4	3	4	3	4	3	4
TRUE CONC:	75.0	71.0	75.0	71.0	75.0	71.0	75.0	71.0
LAB NUMBER								
1	59.9	62.6	58.7	59.5	54.4	24.2	47.2	40.5
2	68.7	66.9	56.7	69.6	60.2	53.1	60.6	51.0
3	66.[illegible]	59.9	59.3	48.[illegible]	44.8	46.9	33.2	33.0
4	59.8	77.1	55.6	47.[illegible]	62.5	69.0	102.0	44.4
5	5[illegible].7	59.[illegible]	52.0	37.1	25.[illegible]	48.2	*	25.4
6	67.9	5[illegible].6	36.4	52.2	36.5	37.9	22.9	42.6
7	66.7	68.9	65.1	61.5	43.5	46.5	51.2	41.7
8	69.5	57.4	63.[illegible]	38.5	35.6	42.[illegible]	6[illegible].8	40.4
9	82.6	54.6	69.3*	72.6*	66.1*	67.9*	79.2*	62.2*
10	60.2	35.6	59.[illegible]	71.9	46.2	44.4	54.4	52.2
11	64.1	60.9	6[illegible].1	43.7	42.7	46.5	48.[illegible]	36.5
12	67.5	59.4	57.9	48.6	54.6	49.2	45.4	49.8
13	62.8	97.6*	48.[illegible]	43.5	104.4*	56.[illegible]	5.5*	*
14	54.7	54.1	67.5	36.6	64.3	55.5	69.5	45.7
15	2[illegible].2	3[illegible].5	45.7	27.2	43.5	2[illegible].[illegible]	47.7	26.5

TABLE C-120

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - P/N (2) **

RAW DATA FOR HEXACHLOROBUTADIENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
SPIKE CODE:	5	6	5	6	5	6	5	6
TRUE CONC:	640.0	685.0	640.0	685.0	640.0	685.0	640.0	685.0
LAB NUMBER								
1	944.2	350.0	359.0	437.0	350.0	492.0	449.0	431.0
2	359.6	389.4	425.8	403.7	446.2	381.3	357.8	435.8
3	878.3	877.8	370.8	477.8	290.4	391.0	262.1	260.0
4	532.0	475.0	368.0	352.0	324.0	303.0	244.0	338.0
5	422.0	490.0	523.0	399.0	289.0	344.0	55.1	312.0
6	359.0	228.0	361.0	366.0	419.0	315.0	306.0	312.0
7	383.0	411.0	504.0	445.0	16.1*	401.0	433.0	460.0
8	693.0	723.5	399.7	316.3	437.2	671.8*	450.2	751.3*
9	689.0	482.0	897.0*	1110.0*	918.0*	725.0*	942.0*	845.0*
10	379.0	395.0	409.0	299.0	404.0	368.0	364.0	349.0
11	372.0	398.0	340.0	354.0	315.0	370.0	354.0	303.0
12	424.0	522.0	440.0	426.0	494.0	473.0	424.0	460.0
13	1198.0*	822.9	498.6	438.4	580.9	318.6	91.8*	69.6*
14	409.3	398.1	352.5	363.8	428.1	515.5	542.8	409.7
15	533.7	237.4	409.0	47.0*	367.8	407.5	303.9	203.5

TABLE C-121

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR HEXACHLOROETHANE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
APPLIED WGT	1	2	1	2	1	2	1	2
TRUE CONC:	7.0	6.3	7.0	6.3	7.0	6.3	7.0	6.3
LAB NUMBER								
1	1.6	4.1	2.9	2.9	2.2	2.1	4.7	2.0
2	5.4	4.2	5.5	2.9	5.5	5.2	6.4	5.8
3	5.0*	3.3*	4.9	2.9	3.6	1.4	2.7	2.9
4	4.9	2.7	6.9	4.0	5.9	6.7	6.7	9.1
5	4.2	6.2	5.2	5.2*	5.8	*	*	116.0*
6	2.9	5.9	0.0*	3.9	2.5	2.8	2.7	1.9
7	3.6	3.2	4.3	3.0	3.6	4.0	3.8	3.9
8	5.1	3.5	4.9	7.2	3.6	3.2	3.9	3.2
9	7.9	5.1	8.0*	6.1*	8.3*	6.6*	0.0*	7.1
10	2.6	1.9	3.3	6.6	5.4	4.6	6.0	1.4
11	1.7	2.6	2.7	2.2	3.1	2.2	2.9	2.4
12	4.6	4.6	5.2	4.4	5.8	4.9	4.1	4.4
13	0.0*	0.0*	0.0*	4.0	3.4	0.0*	0.0*	*
14	4.6	3.9	0.0*	0.0*	10.1*	3.3	7.2	5.4
15	0.0*	0.0*	3.3	0.0*	0.0*	3.1	3.3	0.0*

TABLE C-122

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR HEXACHLOROETHANE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
SPIKE NO:	3	4	3	4	3	4	3	4
TRUE CONC:	52.0	49.0	52.0	49.0	52.0	49.0	52.0	49.0
LAB NUMBER								
1	33.9*	25.1	24.3	37.1	42.4	17.3	25.6	24.3
2	46.8	37.5	48.2	42.4	45.6	50.1	48.5	38.5
3	55.8*	50.7*	42.4	31.7	32.5	30.4	38.7	29.1
4	37.8	47.3	33.3	33.1	53.5	48.5	77.9	36.5
5	36.9	47.0	30.8	39.3	23.6	49.5	15.5	600.0*
6	47.2	33.0	26.4	39.5	19.6	29.8	26.2	25.4
7	39.8	38.6	29.9	39.1	34.4	33.6	38.0	32.0
8	34.3	31.9	46.4	37.7	29.4	25.6	40.1	24.1
9	39.8	42.0	57.9*	49.0*	54.0*	48.9*	61.2	37.3
10	47.0	24.1	42.4	99.3*	28.9	31.3	34.5	37.3
11	32.4	28.6	30.7	29.5	31.7	33.8	34.4	23.6
12	34.2	39.5	42.9	35.6	41.6	35.0	36.2	37.1
13	24.0	84.2*	29.1	32.1	129.1*	35.8	0.0*	*
14	41.1	41.4	50.1	10.9	35.1	42.9	49.2	43.1
15	35.8*	9.9*	31.7	9.2	30.1	2.6	30.6	33.1

TABLE C-123

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR HEXACHLOROETHANE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
ANGLE NO:	5	6	5	6	5	6	5	6
TRUE CONC:	448.0	480.0	448.0	480.0	448.0	480.0	448.0	480.0
LAB NUMBER								
1	352.0	334.0	268.0	301.0	255.0	376.0	296.0	285.0
2	345.5	350.9	378.4	356.9	329.5	315.7	230.1	298.6
3	445.8*	421.8*	280.7	390.2	255.5	291.2	210.6	326.0
4	363.0	353.0	374.0	332.0	352.0	302.0	273.0	368.0
5	292.0	350.0	371.0	256.0	246.0	0.0*	*	1140.0*
6	417.0	372.0	275.0	268.0	379.0	256.0	312.0	298.0
7	348.0	374.0	365.0	314.0	14.9*	338.0	369.0	417.0
8	391.9	438.3	365.9	367.8	352.9	445.4	251.5	443.6
9	557.8*	323.0	523.0*	594.0*	552.0*	484.0*	663.0*	564.0*
10	358.0	269.0	366.0	220.0	308.0	279.0	295.0	292.0
11	317.0	356.0	302.0	315.0	292.0	360.0	282.0	301.0
12	327.0	417.0	340.0	326.0	329.0	360.0	321.0	339.0
13	675.1*	292.1	327.3	276.3	466.8	222.0	0.0*	31.3*
14	343.7	312.3	226.4	201.0	273.6	268.5	382.8	421.7
15	79.4*	117.8*	317.4	174.4	247.8	512.0	112.3	322.5

TABLE C-124

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR INDENO(1,2,3-C,D)PYRENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
SPIKE NO:	1	2	1	2	1	2	1	2
PAIR CODE:	7.4	11.0	7.4	11.0	7.4	11.0	7.4	11.0
LAB NUMBER								
1	1.9	0.8	0.3	0.1	0.0*	2.0	3.4	1.6
2	5.0	9.7	4.0	4.2	2.5	2.2	2.9	5.0
3	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
4	0.8*	0.4*	0.0*	2.2	6.6	0.0*	0.0*	0.0*
5	5.0	6.0	3.8	3.8	2.5	*	3.6	*
6	0.0*	8.1	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	0.0*	0.0*	0.0*	1.2	0.0*	0.0*	0.0*	1.8
8	2.4	2.1	0.0*	0.0*	0.0*	1.4	0.0*	0.8
9	4.5	3.4	0.0*	2.6	0.6	3.7	0.6	2.3
10	1.0	0.8	4.8*	6.4*	7.8*	4.1*	2.8	0.7
11	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
12	4.2	6.5	4.0	5.6	3.1	4.0	4.1	6.2
13	1.4	3.3	0.0*	0.0*	0.0*	2.8	*	*
14	2.2	14.4	5.2*	4.3*	0.1	5.0*	10.9*	0.0*
15	0.5	1.7	0.4	1.2	0.0*	0.0*	0.0*	0.0*

TABLE C-125

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR INDENO(1,2,3-C,D)PYRENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
APPLIED UG/L	3	4	3	4	3	4	3	4
TRUE CONC'S	74.0	56.0	74.0	56.0	74.0	56.0	74.0	56.0
LAB NUMBER								
1	9.3	45.1	13.4	5.7	25.2	4.9	24.5	16.5
2	60.1	43.2	48.5	34.4	29.5	13.6	27.9	28.3
3	7.0*	14.0*	1.6*	0.6*	1.6*	1.7*	2.9*	3.6*
4	158.0*	58.0*	5.3	2.4	13.0	4.1	16.2	1.3
5	53.4	39.4	29.2	17.2	32.1	20.9	*	50.5
6	58.9	28.4	24.6	10.9	17.4	20.4	7.7	10.2
7	35.7	13.0	13.8	9.9	12.1	3.9	39.8	31.2
8	74.3	37.5	0.0*	13.5	3.8	1.2	8.2	9.7
9	38.7	29.5	19.3	19.4	15.9	29.2	23.8	7.3
10	58.0	30.9	169.5*	97.5*	57.0*	27.5*	46.1	26.4
11	158.0*	108.0*	45.0	32.0	108.0*	27.2	31.6	44.1
12	43.1	38.5	31.5	24.5	30.1	21.2	44.5	34.7
13	39.1	23.2	15.4	10.0	39.3	7.6	8.2*	*
14	110.1	80.9*	68.0*	35.3*	27.3	17.4	30.5	28.0
15	29.9	11.3	32.6	14.7	0.0*	3.0	6.6	6.7

TABLE C-126

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR INDENO(1,2,3-C,D)PYRENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
SPIKE OBS:	5	6	5	6	5	6	5	6
SPIKE LEVEL:	278.0	292.0	278.0	292.0	278.0	292.0	278.0	292.0
LAB NUMBER								
1	283.2	184.0	100.0	163.0	259.0	188.0	73.8	221.0
2	300.8	296.6	265.4	256.4	196.8	278.2	141.9	165.3
3	0.0*	259.0*	14.6*	44.0*	23.4*	55.6*	53.4*	44.0*
4	569.0*	514.0*	127.0	107.0	102.0	2.9	38.0	112.0
5	156.0	200.0	223.0	176.0	111.0	154.0	35.7	250.0
6	193.0	96.2	107.0	191.0	245.0	127.0	100.0	61.1
7	133.0	467.0	175.0	368.0	5.1	368.0	335.0	207.0
8	409.2	371.0	421.7	346.2	199.5	497.7	185.6	417.8
9	226.3	121.0	107.0	238.0	206.0	204.0	209.0	202.0
10	247.3	469.0	487.0*	498.0*	462.0*	484.0*	246.0	331.0
11	1074.0*	890.0*	830.0*	671.0*	680.0*	814.0*	562.0*	860.0*
12	179.0	214.0	164.0	163.0	179.0	206.0	192.0	196.0
13	165.2	125.1	137.2	130.4	168.6	88.4	*	*
14	485.2	423.5	428.7*	407.0*	332.5	236.8	223.1	457.2
15	59.0	118.8	457.4	122.2	125.2	89.1	126.5	24.9

TABLE C-127

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR N-NITROSODI-N-PROPYLAMINE ANALYSIS BY WATER TYPE
LOW TOWDEN FAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
SPIKE LEVEL	1	2	1	2	1	2	1	2
TRUE CONC.	19.0	20.0	18.0	20.0	19.0	20.0	18.0	20.0
LAB NUMBER								
1	18.6	0.0*	0.0*	12.9	12.6	19.9	17.6	0.0*
2	13.2	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	17.9
3	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	13.1	0.0*
4	0.0*	0.0*	0.0*	9.7	0.0*	18.8	0.0*	0.0*
5	19.7	29.0	15.9	24.3	19.8	*	0.0*	118.0*
6	0.0*	18.7	0.0*	0.0*	0.0*	9.4	9.2	21.2
7	6.6	4.1	2.8	12.3	17.3	12.0	28.5	31.6
8	0.0*	9.2	4.5	10.9	10.3	13.9	18.4	10.0
9	29.9	33.0	5.7	24.3	17.4	23.4	20.4*	29.5*
10	13.2	6.4	15.8	4.1	17.0	13.8	18.3	3.6
11	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
12	29.3	20.3	24.2	22.3	20.7	26.8	20.7	22.9
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	0.0*	29.7	9.3	0.0*	20.9	0.0*	30.1	0.0*
15	0.0*	0.0*	4.4	0.0*	4.7	0.0*	0.9	0.0*

TABLE C-128

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR N-NITROSODI-N-PROPYLAMINE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
SPIKE NO:	3	4	3	4	3	4	3	4
PAGE EDGE:	95.0	100.0	95.0	100.0	95.0	100.0	95.0	100.0
LAB NUMBER								
1	94.9	79.9	79.0	85.0	173.0	76.3	51.9	41.9
2	155.7	124.6	84.5	84.1	89.5	126.8	73.1	67.9
3	122.7	108.3	83.6	67.1	20.0	104.4	8.0	121.0
4	69.8	42.7	77.9	68.1	116.0	113.0	119.0	106.0
5	92.6	137.0	101.0	104.0	70.5	141.0	*	169.0
6	74.6	51.2	0.0*	72.4	41.5	51.7	95.3	74.2
7	132.0	35.7	117.0	135.0	230.0	92.6	26.2	227.0
8	118.9	118.4	89.2	129.7	66.9	81.9	123.8	49.6
9	121.0	125.0	138.0	139.0	129.0	122.0	174.0*	142.0*
10	135.0	160.0	142.0	135.0	105.0	145.0	94.1	135.0
11	83.9	72.8	46.2	0.0*	45.8	72.7	72.8	59.5
12	71.0	66.7	85.5	91.1	85.8	69.4	89.4	58.8
13	0.0*	0.0*	0.0*	0.0*	0.0*	10.5*	*	*
14	98.2	66.9	65.7	70.7	21.9	68.6	0.0*	93.6
15	87.5*	47.7	74.1	52.7	45.8	27.0	44.5	25.6

TABLE C-129

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR N-NITROSODI-N-PROPYLAMINE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
APPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	527.0	489.0	527.0	489.0	527.0	489.0	527.0	489.0
LAB NUMBER								
1	474.0	453.0	282.0	372.0	822.0	606.0	409.0	351.0
2	1219.1	1164.6	1191.8	925.5	796.0	846.5	550.2	690.8
3	0.0*	377.0	347.6	350.0	0.0*	305.9	557.0	475.0
4	447.0	383.0	384.0	428.0	509.0	294.0	373.0	489.0
5	321.0	457.0	634.0	314.0	411.0	281.0	175.0	407.0
6	472.0	142.0	268.0	243.0	393.0	214.0	432.0	514.0
7	1030.0	37.1	1157.0	72.8	39.0	36.3	45.1	31.4
8	1219.2	1011.4	1413.3	1499.3*	590.2	1236.0	712.0	929.0
9	722.0	442.0	815.0	634.0	906.0	500.0	1030.0*	690.0*
10	1330.0	661.0	901.0	980.0	1040.0	652.0	596.0	540.0
11	562.0	560.0	625.0	136.0	475.0	517.0	488.0	451.0
12	439.0	472.0	467.0	425.0	449.0	456.0	471.0	455.0
13	185.0*	0.0*	277.2*	0.0*	69.1*	82.4*	*	15.5*
14	472.0	465.8	393.4	374.5	530.7	228.3	405.7	488.4
15	316.0	203.6	791.4	295.5	740.7	928.6	372.7	302.1

TABLE C-130

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR NITROBENZENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
[illegible]	1	2	1	2	1	2	1	2
[illegible]	10.0	9.0	10.0	9.0	10.0	9.0	10.0	9.0
LAB NUMBER								
1	[illegible]	5.7	11.9	6.4	0.0*	14.0	4.5	5.8
2	[illegible]	[illegible]	3.6	3.1	0.0*	6.4	0.0*	5.9
3	[illegible]	[illegible]	0.0*	4.4	4.3	3.5	0.0*	0.0*
4	[illegible]	6.3	7.4	20.9*	19.9*	19.8	10.5*	37.6*
5	7.2	[illegible]	10.9	9.9	9.4	*	0.0*	26.0*
6	0.0*	[illegible]	0.0*	5.4	5.6	4.1	5.5	8.5
7	[illegible]	[illegible]	[illegible]	7.2	7.6	7.7	9.4	7.5
8	[illegible]	5.5	7.3	[illegible]	6.5	6.2	9.1	0.0*
9	[illegible]	7.0	[illegible]	[illegible]	[illegible]	[illegible]	8.0	15.6*
10	[illegible]	[illegible]	[illegible]	4.7	[illegible]	7.6	[illegible]	2.2
11	0.0*	0.0*	0.0*	0.0*	0.0*	21.3	24.8*	0.0*
12	[illegible]	7.2	7.4	6.9	7.6	6.7	6.8	7.3
13	[illegible]	0.0*	0.0*	[illegible]	0.0*	0.0*	*	*
14	[illegible]	0.0*	0.0*	0.0*	0.0*	5.2	8.4	6.8
15	0.0*	0.0*	4.1*	0.0*	0.0*	3.3	9.0	2.9

TABLE C-131

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (3) **

RAW DATA FOR NITROBENZENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	75.0	71.0	75.0	71.0	75.0	71.0	75.0	71.0
LAB NUMBER								
1	75.4	51.8	65.4	52.4	121.0	60.2	35.5	44.1
2	95.7	77.0	79.3	75.3	71.3	0.0*	83.6	79.4
3	99.8	106.8	64.1	54.7	53.5	49.1	146.0	1476.0*
4	80.4	73.5	61.4	67.0	93.5	81.4	198.0*	103.0*
5	80.0	92.0	93.2	77.3	53.0	114.0	980.0*	130.0
6	79.2	55.7	41.4	62.6	38.4	56.6	68.2	60.7
7	78.4	70.6	70.3	79.4	65.6	68.7	79.1	73.4
8	81.4	80.7	0.0*	75.7	70.0	53.7	81.5	64.5
9	88.3	30.4	107.0*	97.6*	116.0*	114.0*	142.0	61.1
10	83.1	75.0	94.6	71.9	68.9	83.5	72.0	77.0
11	90.9	74.8	67.0	70.3	74.4	73.1	70.4	64.6
12	55.7	59.2	66.1	49.6	60.4	59.4	54.5	60.6
13	81.8	82.8	41.3	47.9	103.9	61.5	*	*
14	56.4	50.6	65.1	32.3	55.1	51.2	59.5	36.7
15	14.6*	33.5*	56.2*	17.3*	71.5	17.0	53.2	25.1

TABLE C-132

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR NITROBENZENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	639.0	685.0	639.0	685.0	639.0	685.0	639.0	685.0
LAB NUMBER								
1	610.0	454.0	317.0	426.0	695.0	694.0	397.0	520.0
2	1165.9	1233.7	1006.6	1057.1	959.1	896.3	678.1	865.6
3	669.0	702.0	665.4	663.0	511.0	569.0	644.6	961.0
4	656.0	920.0	798.0	1040.0	1100.0	605.0	872.0*	1160.0*
5	707.0	620.0	895.0	576.0	453.0	616.0	205.0	762.0
6	722.0	304.0	487.0	473.0	692.0	427.0	544.0	736.0
7	762.0	734.0	797.0	831.0	60.2	795.0	779.0	891.0
8	832.4	944.0	1103.2	1125.3	714.9	804.4	926.3	868.7
9	1280.0	693.0	1040.0*	1060.0*	1160.0*	1040.0*	1570.0*	805.0
10	747.0	724.0	924.0	807.0	850.0	805.0	680.0	645.0
11	753.0	829.0	732.0	765.0	594.0	693.0	588.0	725.0
12	500.0	609.0	523.0	489.0	512.0	590.0	523.0	539.0
13	4901.5*	341.5	447.3	563.9	797.6	489.0	9.6*	68.3*
14	547.4	504.8	449.3	446.3	411.0	374.0	494.4	579.1
15	475.7*	366.0*	6.3*	86.9*	773.7	933.5	333.4	318.7

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TABLE C-133

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR PHENANTHRENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	10.0	9.0	10.0	9.0	10.0	9.0	10.0	9.0
LAB NUMBER								
1	6.7	8.3	7.3	6.2	6.7	5.5	13.9	11.0
2	9.9	9.6	10.2	7.0	10.0	8.7	10.1	9.6
3	8.1	8.9	7.5*	5.9*	5.9*	8.0*	3.7*	3.1*
4	8.8	8.3	8.8	8.0	8.6	7.7	9.6	9.1
5	0.0*	0.0*	8.4	7.1	7.7	*	1.3*	0.0*
6	6.7	9.5	8.3	7.3	7.5	11.9	7.0	2.8
7	8.4	8.1	9.8	8.7	9.4	9.0	10.9	9.0
8	9.0	8.5	9.5	10.4	7.9	8.6	8.6	6.7
9	11.5	8.8	12.7*	9.2*	12.1*	10.7*	10.1	8.7
10	10.4	5.3	9.9*	14.3*	13.3*	13.9*	14.2	4.5
11	7.9	7.7	8.0	7.9	9.2	8.0	8.4	8.1
12	7.5	8.1	8.8	8.3	8.9	8.9	7.9	9.0
13	9.6	5.1	8.1	6.0	9.5	8.7	85.2*	26.6*
14	5.3	5.9	7.8	7.1	7.4	7.4	12.0	8.5
15	4.2*	4.3*	6.8*	5.7*	16.0*	6.7	7.2	3.9

TABLE C-134

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR PHENANTHRENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	75.0	71.0	75.0	71.0	75.0	71.0	75.0	71.0
LAB NUMBER								
1	66.7	65.2	63.2	62.6	66.1	61.1	72.7	65.1
2	75.1	67.6	0.0*	67.1	73.7	74.4	68.4	69.3
3	68.6	66.6	52.0*	51.5*	46.5*	48.7*	29.9*	30.8*
4	70.5	62.2	63.6	63.8	63.5	61.4	101.0	66.6
5	0.0*	0.0*	62.2	45.2	0.0*	57.0	0.0*	24.0*
6	77.1	58.7	66.0	62.1	67.7	62.9	34.9	57.9
7	67.7	66.9	62.2	68.1	66.5	64.1	64.5	60.2
8	61.6	68.7	80.0*	61.7	54.2	47.3	63.0	48.2
9	71.2	62.2	97.4*	74.9*	101.0*	82.3*	85.4	73.8
10	102.0*	83.2*	83.6*	72.3*	91.7*	84.9*	90.0	76.1
11	64.3	61.9	62.5	61.1	60.7	60.3	59.9	57.6
12	55.7	60.8	67.0	55.6	62.0	59.5	58.3	59.4
13	75.8	62.0	58.4	57.4	69.0	62.5	116.3	145.5*
14	66.3	60.6	66.5	54.9	68.5	57.9	69.6	63.9
15	39.5*	33.2*	65.4*	42.9*	58.0	94.9*	55.8	32.6*

TABLE C-135

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR PHENANTHRENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	640.0	685.0	640.0	685.0	640.0	685.0	640.0	685.0
LAB NUMBER								
1	642.0	665.0	489.0	632.0	539.0	606.0	560.0	643.0
2	485.5	474.7	453.6	488.*	463.6	469.0	400.2	461.1
3	513.0	623.0	309.0*	330.0*	249.7*	333.0*	239.4*	1?6.0*
4	649.0	538.0	454.0	425.0	444.0	508.0	419.0	434.0
5	418.0*	0.0*	607.0	466.0	327.0	0.0*	45.4*	435.6*
6	530.8	273.8	426.8	508.8	555.2	447.2	381.6	310.6
7	447.0	452.0	435.0	402.0	47.3	442.0	429.0	4?9.0
8	442.1	482.6	508.1	507.5	358.4	456.6	357.6	512.4
9	838.0	558.0	743.0*	1090.0*	1050.0*	825.0*	868.0	891.0
10	731.0	797.0	784.0*	721.0*	812.0*	826.0*	649.0	555.0
11	440.0	506.0	421.0	431.0	382.0	433.0	443.0	462.0
12	406.0	507.0	462.0	449.0	451.0	496.0	471.0	489.0
13	718.5	534.2	561.4	532.7	597.0	337.8	267.6	*
14	590.2	577.1	546.0	563.2	529.8	584.7	604.0	624.1
15	118.7*	173.5*	184.9*	147.7*	223.8	803.5*	201.1	197.7

TABLE C-136

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR PYRENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	5.0	4.5	5.0	4.5	5.0	4.5	5.0	4.5
LAB NUMBER								
1	2.9	3.7	2.7	2.1	2.3	2.3	8.7	4.7
2	4.9	5.0	7.1*	4.0	4.8	3.8	5.2	4.3
3	3.5	3.9	2.9*	2.1*	2.7*	2.8*	0.9*	0.6*
4	4.8	4.2	4.4	3.6	4.3	4.1	5.9	4.8
5	4.2	3.0	4.5	3.2	3.2	*	*	9.4
6	3.5	4.9	3.7	3.7	3.8	4.3	3.0	1.5
7	3.4	3.2	3.9	3.3	4.1	3.7	8.9	9.5
8	3.2	3.1	2.9	2.3	2.4	2.2	2.9	2.9
9	5.8	4.1	6.4*	4.8*	6.0*	6.1*	4.4	4.3
10	3.9	1.8	3.5	4.9	4.2	4.7	4.8	1.6
11	3.8	3.6	3.7	3.8	5.0	4.5	4.1	4.0
12	4.3	4.5	5.5	4.7	4.9	4.7	4.8	5.1
13	4.4	0.0*	3.9	2.8	4.3	4.7	13.3*	*
14	2.5	2.9	4.1	3.9	3.6	4.2	5.3	4.0
15	1.1*	1.1*	2.9	1.0	2.0	3.4	2.9	2.4

TABLE C-137

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR PYRENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	38.0	36.0	38.0	36.0	38.0	36.0	38.0	36.0
LAB NUMBER								
1	26.5	33.0	32.2	28.2	32.9	27.4	39.2	29.6
2	40.5	34.5	41.7	33.9	41.7	32.1	31.1	34.6
3	24.4	26.4	19.6*	20.0*	18.7*	18.4*	7.4*	9.6*
4	39.7	42.3*	32.0	28.3	28.4	27.6	37.4	26.2
5	30.6	27.5	32.7	21.4	17.9	27.1	4.7	62.2*
6	39.9	27.2	31.9	27.2	29.6	32.2	10.7	22.4
7	32.7	31.4	28.4	30.5	29.6	26.3	36.6	39.1
8	27.2	28.3	14.6*	20.3	21.4	17.8*	27.2	21.5
9	33.4	33.1	47.2*	36.0*	42.8*	45.8*	40.2	29.7
10	30.8	30.0	25.9	23.8	24.5	26.6	28.8	24.9
11	32.5	29.9	31.1	31.6	32.8	31.5	29.6	29.2
12	29.7	32.1	35.5	32.5	32.0	30.7	33.1	31.2
13	27.4	31.3	28.2	27.8	56.2*	29.4	25.3	*
14	30.3	27.3	29.0	24.9	34.4	23.8	33.8	27.7
15	10.9*	13.2*	33.8	10.4*	30.6	31.0	23.2	20.5

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TABLE C-138

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR PYRENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	320.0	343.0	320.0	343.0	320.0	343.0	320.0	343.0
LAB NUMBER								
1	312.0	307.0	210.0	304.0	267.0	300.0	245.6	318.6
2	263.7	260.4	250.8	260.9	260.9	273.2	245.1	283.9
3	186.9	353.0	73.8*	92.9*	69.7*	97.8*	100.7*	82.0*
4	380.0	266.0	193.0	193.0	152.0	160.0	147.0	178.0
5	214.0	250.0	313.0	227.0	157.0	210.0	15.9	111.0
6	243.0	133.0*	239.0	248.0	270.0	210.0	156.0	107.0
7	286.0	295.0	288.0	274.0	23.1*	273.0	276.0	283.0
8	272.8	322.6	222.6	219.6	209.6	251.1	167.0	308.7
9	427.0	265.0	381.0*	529.0*	456.0*	455.0*	419.0	403.0
10	269.0	213.0	224.0	223.0	224.0	204.0	197.0	156.0
11	239.0	277.0	229.0	238.0	215.0	234.0	232.0	244.0
12	229.0	271.0	247.0	261.0	243.0	272.0	250.0	221.0
13	292.8	257.7	265.5	243.5	309.2	166.5	88.3	*
14	259.5	248.4	238.1	245.0	238.8	298.6	295.4	269.5
15	68.9*	87.2*	155.8	60.4*	175.6	212.2	126.0	88.0

TABLE C-139

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 1,2-DICHLOROBENZENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	6.0	5.4	6.0	5.4	6.0	5.4	6.0	5.4
LAB NUMBER								
1	2.2	5.3	3.2	2.7	2.5	2.3	5.0	1.9
2	7.5	3.1	5.4	2.1	3.5	2.7	4.3	3.6
3	5.3	5.0	7.9	4.1	0.0*	3.6	3.8	3.6
4	5.1	3.2	7.9	4.1	6.8	7.4	7.3	10.7
5	4.6	5.0	5.0	4.4	4.6	*	*	*
6	3.2	4.8	4.6	4.9	2.7	2.6	3.4	3.9
7	4.0	3.6	5.6	4.6	3.9	5.6	4.2	3.5
8	6.4	6.8	9.8*	8.3*	5.3	5.9	7.5	8.3
9	7.3	4.6	4.3	6.8	7.0	6.6	4.2	5.9
10	9.0*	5.6*	8.2*	6.9*	13.4	19.5*	13.3*	6.2
11	2.1	3.2	3.5	3.1	3.5	2.6	3.4	3.1
12	8.5	9.1*	9.9	9.2	9.6	9.5	7.5	9.1
13	7.7	0.0*	0.0*	2.3	0.0*	0.0*	*	*
14	4.5	4.2	0.0*	0.0*	8.4	4.0	5.5	5.2
15	25.9*	0.0*	3.6	9.5	0.0*	8.3	7.0	4.8

TABLE C-140

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 1,2-DICHLOROBENZENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	45.0	43.0	45.0	43.0	45.0	43.0	45.0	43.0
LAB NUMBER								
1	18.2	29.7	32.0	33.6	40.9	19.9	29.9	22.6
2	49.9	40.0	44.7	40.6	0.0*	44.7	40.3	35.5
3	0.0*	47.2	38.6	33.5	0.0*	30.8	49.5	33.7
4	22.8	42.9	32.8	26.3	40.0	30.4	64.3	48.0
5	28.0	27.0	32.5	21.7	17.9	29.4	*	30.9
6	37.4	32.6	24.7	35.3	20.1	27.9	24.9	25.1
7	32.6	38.0	34.7	42.0	30.7	32.4	32.8	29.4
8	39.0	46.0	70.0*	47.0*	29.7	33.0	50.4	45.3
9	36.2	39.2	50.9	48.4	46.6	44.7	21.6	16.3
10	98.1*	45.0*	90.6*	59.5*	60.8	13.6	60.3	17.4
11	37.6	30.8	33.9	30.7	30.8	32.5	32.2	27.4
12	35.8	42.1	42.6	60.8	39.3	40.8	62.3	41.6
13	37.8	32.8	24.0	29.1	107.9*	23.9	*	*
14	35.6	36.1	36.8*	12.3*	36.1	32.2	39.4	32.1
15	11.1	109.7*	31.3	62.7	53.4	0.0*	31.3	18.9

TABLE C-141

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 1,2-DICHLOROBENZENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	384.0	411.0	384.0	411.0	384.0	411.0	384.0	411.0
LAB NUMBER								
1	341.0	218.0	244.0	297.0	276.0	329.0	266.0	376.0
2	313.3	341.3	325.6	318.3	291.6	296.5	210.9	295.8
3	408.0	386.7	313.0	378.4	284.0	309.0	281.0	371.0
4	319.0	360.0	368.0	313.0	309.0	253.0	189.0	340.0
5	231.0	270.0	320.0	214.0	194.0	218.0	61.7	244.0
6	346.0	138.0	219.0	218.0	282.0	234.0	256.0	281.0
7	236.0	306.0	339.0	349.0	20.7*	262.0	274.0	338.0
8	345.2	420.3	456.0*	431.0*	273.3	424.0	339.8	444.0
9	501.0	303.0	476.0*	515.0	495.0*	421.0	525.0	346.0
10	375.0*	726.0*	667.0*	480.0*	320.0	526.0	424.0	828.0*
11	324.0	351.0	297.0	331.0	279.0	340.0	272.0	312.0
12	337.0	291.0	272.0	255.0	283.0	287.0	279.0	286.0
13	474.3	256.0	298.7	279.6	398.5	226.9	201.7	54.0
14	269.5	245.1	176.1*	171.8*	217.5	214.9	289.4	316.3
15	947.0*	253.0	256.8	109.1	366.4	318.4	129.0	160.3

TABLE C-142

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 1,2,4-TRICHLOROBENZENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	11.0	10.0	11.0	10.0	11.0	10.0	11.0	10.0
LAB NUMBER								
1	4.0	8.4	5.1	5.4	5.0	4.6	8.6	4.7
2	10.0	10.2	11.3	8.1	8.8	8.9	9.4	9.5
3	7.3	7.6	6.5	5.0	5.2	5.0	5.5	4.9
4	12.7	10.1	16.3*	10.1*	11.7	17.5	14.9*	19.2*
5	6.6	10.0	9.8	9.9	9.4	*	10.6	*
6	8.3	12.1	11.0	8.8	7.9	8.7	8.1	10.2
7	7.8	9.2	10.1	9.7	8.7	10.0	8.8	10.7
8	8.8	10.3	9.8	8.2	6.9	6.5	11.4	7.1
9	13.1*	52.7*	8.8	11.1	13.5*	11.5*	8.6	9.2
10	10.2	4.4	10.5	14.2	14.7	10.1	10.6	2.9
11	4.0*	6.2*	6.5	5.9	6.0	5.3	5.7	5.6
12	8.8	10.6	12.2*	11.5*	11.4	9.8	10.1	11.8
13	11.6	0.0*	6.6	6.0	7.5	3.4	*	*
14	8.9	6.7	4.5	0.0*	9.9	12.3	11.6	10.4
15	2.0*	2.3*	7.8	4.5	26.5*	8.5	17.6*	21.9*

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TABLE C-143

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 1,2,4-TRICHLOROBENZENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	74.0	72.0	74.0	72.0	74.0	72.0	74.0	72.0
LAB NUMBER								
1	40.5	48.7	61.2	61.7	63.9	47.2	52.3	43.7
2	100.4	79.6	83.3	71.4	68.6	81.8	73.9	64.7
3	71.1	67.3	56.3	48.7	48.0	46.6	58.1	55.3
4	98.9	122.0*	96.9*	97.7*	92.1	115.0*	95.6*	102.0*
5	59.2	73.0	62.2	59.9	40.8	74.7	*	47.4
6	93.8	67.3	50.5	71.6	54.7	52.1	64.1	67.2
7	74.4	72.1	66.6	69.8	60.3	58.2	70.5	56.8
8	73.5	77.9	72.3	62.2	50.9	41.8	68.7	47.1
9	387.3*	75.8*	98.9	78.4	99.8*	72.5*	78.3	59.0
10	81.9	70.5	80.0	71.0	56.8	75.7	59.1	64.9
11	57.9*	48.8*	53.7	49.6	47.6	51.0	49.8	44.1
12	60.9	75.0	92.5*	75.1*	75.5	62.3	71.4	79.3
13	91.5	95.2	50.2	52.3	116.6*	57.0	3.9*	6.9*
14	63.2	60.7	64.6	44.6	73.3	62.1	74.1	57.8
15	19.9*	22.2*	67.5	28.4	64.8	240.1*	75.7	66.1

TABLE C-144

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 1,2,4-TRICHLOROBENZENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	591.0	622.0	591.0	622.0	591.0	622.0	591.0	622.0
LAB NUMBER								
1	509.0	432.0	391.0	485.0	410.0	480.0	450.0	425.0
2	466.0	501.2	489.1	450.1	429.5	458.4	340.7	447.4
3	626.0	618.0	444.0	577.8	363.8	479.0	317.4	470.0
4	792.0	618.0	575.0*	606.0*	575.0	528.0	515.0*	601.0*
5	417.0	460.0	588.0	377.0	288.0	382.0	75.5	18.7*
6	625.0	261.0	386.0	385.0	450.0	369.0	496.0	517.0
7	472.0	483.0	471.0	546.0	33.5*	433.0	515.0	523.0
8	611.1	691.7	722.3	585.2	434.6	574.7	438.3	724.7
9	872.0*	2730.0*	248.0	842.0*	620.0*	654.0*	825.0	694.0
10	484.0	453.0	576.0	487.0	571.0	443.0	371.0	385.0
11	388.0*	412.0*	355.0	369.0	342.0	392.0	364.0	379.0
12	522.0	593.0	626.0*	546.0*	540.0	545.0	573.0	579.0
13	1262.5*	570.7	469.4	427.0	628.3	320.3	58.1*	61.4*
14	454.4	447.9	394.3	401.3	437.1	608.4	595.4	509.4
15	196.6*	179.5*	366.6	210.8	437.7	1506.2*	356.3	399.8

TABLE C-145

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 1,4-DICHLOROBENZENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	12.0	11.0	12.0	11.0	12.0	11.0	12.0	11.0
LAB NUMBER								
1	2.8	7.7	4.4	4.1	3.5	3.5	7.4	2.8
2	6.4	4.7	6.3	2.2	4.2	4.0	3.9	6.0
3	7.2	7.9	7.7	4.9	5.9	4.2	8.2	11.9
4	6.4	3.9	6.2	6.5	6.3	8.1	6.9	5.1
5	5.1	6.0	6.8	6.0	5.7	*	*	*
6	8.3	12.0	11.3	9.2	7.1	6.9	9.5	9.7
7	5.4	8.2	9.0	8.5	6.4	8.1	8.0	6.6
8	4.6	8.9	8.2	7.6	8.0	7.9	10.1	8.3
9	9.1	6.3	9.4	8.6	9.5	8.1	5.4	8.7
10	6.3	9.9	4.6	5.2	8.9*	8.1*	10.6	6.9
11	3.1	5.1	5.2	4.6	5.5	4.6	5.1	4.6
12	0.0*	0.0*	0.0*	0.0*	0.5*	0.0*	0.0*	0.0*
13	10.6	0.0*	6.1	5.5	0.0*	0.0*	*	*
14	8.2	7.8	0.0*	0.0*	14.8*	8.4	10.2	9.4
15	25.9*	0.0*	6.5	9.5	0.0*	8.4	4.7	6.1

TABLE C-146

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 1,4-DICHLOROBENZENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SUPFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	79.0	77.0	79.0	77.0	79.0	77.0	79.0	77.0
LAB NUMBER								
1	28.6	41.6	47.8	48.8	58.3	39.0	44.3	34.3
2	71.1	56.6	62.7	58.9	56.1	117.0*	59.9	53.8
3	78.8	73.3	61.9	51.7	52.3	49.1	117.9*	68.6
4	49.6	46.6	32.5	47.3	47.7	61.4	84.0	51.9
5	45.1	49.0	44.2	37.4	26.5	53.1	*	58.1
6	79.9	74.1	50.2	79.8	47.9	62.9	63.1	58.7
7	69.7	55.1	57.9	68.7	44.9	49.9	51.9	52.7
8	40.2	66.0	93.5	65.6	56.5	53.7	69.6	62.6
9	48.4	48.7	68.9	56.9	65.9	55.6	69.4	27.8
10	51.2	76.5	100.0	64.1	67.4*	79.9*	51.7	103.0*
11	44.4	37.9	40.4	39.5	39.4	41.9	39.7	53.6
12	56.8	57.5	67.3	56.5	67.5	54.3	0.0*	52.1
13	62.3	64.4	48.1	55.4	169.9*	33.4	*	*
14	61.9	61.5	62.4	15.3	58.4	56.0	68.5	56.1
15	11.1	109.7*	58.9	62.7	53.4	0.0*	53.4	33.4

TABLE C-147

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 1,4-DICHLOROBENZENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	617.0	646.0	617.0	646.0	617.0	646.0	617.0	646.0
LAB NUMBER								
1	469.0	314.0	312.0	378.0	344.0	443.0	352.0	387.0
2	435.4	402.0	469.0	437.5	397.7	392.2	296.0	406.9
3	543.0	499.9	375.0	484.1	337.8	375.8	361.0	721.0
4	470.0	489.0	527.0	556.0	536.0	284.0	344.0	503.0
5	195.0	370.0	383.0	232.0	228.0	253.0	86.0	314.0
6	710.0	271.0	434.0	435.0	579.0	500.0	544.0	546.0
7	476.0	395.0	523.0	509.0	25.7	413.0	413.0	517.0
8	369.9	625.1	673.0	637.7	528.5	663.0	509.1	630.5
9	590.0	339.0	548.0	596.0	583.0	489.0	692.0	470.0
10	712.0	315.0	846.0	668.0	815.0*	760.0*	492.0	284.0
11	359.0	389.0	341.0	357.0	317.0	377.0	303.0	334.0
12	501.0	873.0*	711.0	652.0	607.0	704.0	630.0	661.0
13	593.2	331.2	472.1	421.6	502.3	270.4	*	83.4*
14	446.2	393.3	260.0	240.8	364.1	329.8	463.9	514.1
15	993.6	6795.6*	347.9	199.1	261.4	912.4	209.4	242.0

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TABLE C-148

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 2-CHLORONAPHTHALENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	5.0	4.5	5.0	4.5	5.0	4.5	5.0	4.5
LAB NUMBER								
1	1.8	3.8	2.6	2.1	2.3	1.9	5.1	2.9
2	4.5	4.2	5.2	2.0	4.8	3.5	4.7	4.5
3	4.1	4.2	3.9	2.7	3.0	3.0	14.9*	11.4*
4	6.5*	4.5*	7.3*	5.5*	3.6	6.1	6.1*	9.9*
5	3.5	5.0	4.6	5.0	5.6	*	6.2	*
6	3.4	5.1	4.6	3.8	2.8	7.8	4.9	3.2
7	4.4	4.4	5.2	5.1	4.9	4.9	6.9	8.1*
8	3.0	3.9	4.8	4.2	3.0	3.0	4.1	4.0
9	6.3	4.5	7.3*	5.4*	7.0*	5.4*	4.8	5.2
10	4.4	1.9*	3.9	4.7	5.3	4.9	5.7	2.0
11	1.0*	1.4*	1.5*	1.4*	1.4*	1.2*	1.4*	1.3*
12	4.7	4.9	6.0	4.9	5.5	5.1	5.3	5.0
13	5.0	0.0*	3.5	3.2	3.4	2.6	*	*
14	3.9	3.3	4.3	3.2	4.0	3.5	6.1	4.4
15	0.4*	1.2*	3.0*	1.2*	9.6*	3.1	3.6	3.8

TABLE C-149

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 2-CHLORONAPHTHALENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	38.0	36.0	38.0	36.0	38.0	36.0	38.0	36.0
LAB NUMBER								
1	22.3	26.9	32.8	28.6	31.6	27.9	27.1	24.5
2	39.8	35.1	36.3	34.6	36.6	37.8	34.6	32.1
3	44.0	38.5	31.1	27.6	26.6	25.9	169.2*	85.0*
4	39.5*	46.5*	41.4*	37.6*	29.9	33.8	57.5*	39.7*
5	29.6	37.7	30.7	27.5	20.9	36.9	*	29.5
6	33.6	26.7	22.1	29.5	28.7	25.9	24.0	30.7
7	35.2	36.0	34.8	35.1	34.5	30.5	40.6	30.8
8	29.1	30.6	39.5	31.5	22.5	20.5	30.9	25.4
9	37.4	31.2	48.7*	36.8*	49.1*	38.4*	42.5	31.1
10	37.7	32.2	35.8	27.7	32.6	33.2	33.6	34.4
11	13.1*	10.9*	11.9*	11.2*	10.7*	11.3*	11.0*	9.9*
12	30.0	33.0	36.2	33.4	33.9	32.1	35.2	32.4
13	35.5	39.1	25.8	23.1	45.6	28.1	3.6*	*
14	33.5	32.2	34.6	27.6	32.0	30.4	34.7	31.0
15	9.7*	4.6*	30.0*	8.3*	28.3	36.0	26.1	25.6

TABLE C-150

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 2-CHLORONAPHTHALENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	320.0	342.0	320.0	342.0	320.0	342.0	320.0	342.0
LAB NUMBER								
1	289.0	299.0	209.0	297.0	237.0	269.0	258.0	248.0
2	277.2	297.4	263.4	279.3	266.7	264.4	199.2	268.9
3	344.6	335.6	240.3	272.8	201.7	225.0	579.0*	632.0*
4	378.0*	466.0*	422.0*	476.0*	394.0	196.0	360.0*	468.0*
5	219.0	260.0	305.0	232.0	169.0	223.0	37.8	267.0
6	299.0	122.0*	237.0	260.0	259.4	233.0	241.0	206.0
7	283.0	309.0	298.0	348.0	22.4	277.0	330.0	323.0
8	276.5	322.9	333.1	326.2	229.4	291.8	241.4	321.1
9	436.0*	285.0	381.0*	474.0*	432.0*	390.0*	467.0	393.0
10	334.0	323.0	392.0	325.0	374.0	351.0	266.0	282.0
11	118.0*	129.0*	114.0*	116.0*	94.8*	108.0*	101.0*	122.0*
12	285.0	345.0	295.0	319.0	291.0	323.0	296.0	348.0
13	526.1*	245.6	256.4	243.5	306.8	186.5	41.9*	*
14	251.5	248.9	229.8	242.7	203.4	243.7	279.8	273.2
15	96.2*	106.0*	173.1*	83.1*	220.1	342.0	154.4	214.6

TABLE C-151

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 2,4-DINITROTOLUENE ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	12.0	11.0	12.0	11.0	12.0	11.0	12.0	11.0
LAB NUMBER								
1	1.5	2.5	2.7	2.0	1.3	1.7	4.1*	4.8*
2	0.0*	28.3*	22.8*	17.4	6.8	5.7	7.2	16.0
3	3.2	2.7	5.6	0.0*	0.0*	6.2	3.6*	5.6*
4	8.1	0.0*	0.0*	7.5	3.7	7.0	10.5	12.3
5	6.7	6.0	8.1	0.5	4.9	*	45.9*	*
6	6.6	0.0*	3.3	0.0*	0.0*	0.0*	0.0*	0.0*
7	4.6	5.4	4.9	4.5	6.4	5.0	12.1	13.0
8	9.0	4.2	3.9	4.1	4.7	3.6	8.7	6.6
9	12.4	8.0	9.7	10.8	9.5	14.0	11.3	15.5
10	6.6	2.9	5.9	6.9	7.2	7.6	10.7	1.8
11	0.0*	4.1	0.0*	0.0*	7.5	6.0	5.7	5.5
12	8.8	10.5	12.9	12.2	10.8	11.3	10.7	11.3
13	6.8	0.0*	5.6	0.0*	7.7	0.0*	*	*
14	4.3	3.8	8.7	7.5	9.3	4.3	13.3	8.9
15	0.0*	0.0*	2.8	0.0*	0.0*	90.3*	59.5*	0.0*

TABLE C-152

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 2,4-DINITROTOLUENE ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	79.0	77.0	79.0	77.0	79.0	77.0	79.0	77.0
LAB NUMBER								
1	54.0	44.4	49.5	49.4	61.8	48.4	30.5*	52.2*
2	80.4	70.2	71.1	67.9	75.9	59.5	68.3	63.6
3	65.0	63.1	38.4	34.5	37.4	29.7	38.1*	42.7*
4	51.3	37.5	37.9	49.1	46.7	62.3	99.3*	76.8
5	69.2	70.7	86.9	50.8	34.4	658.0*	*	124.0*
6	47.4	148.3*	62.1	158.0*	44.2	168.0*	0.0*	53.2
7	64.1	64.0	48.4	53.6	60.8	49.9	75.1	62.9
8	70.3	70.8	133.7*	70.0	69.0	44.2	72.0	53.4
9	51.9	60.7	66.0	65.6	69.2	72.6	70.3	61.4
10	79.2	86.6	77.0	63.4	69.9	73.7	76.6	64.0
11	57.8	56.8	47.3	51.6	64.1	60.6	61.9	52.5
12	61.4	68.1	75.9	69.2	68.3	64.0	71.7	67.1
13	119.9*	89.4	50.5	61.5	90.5	65.2	*	*
14	64.8	66.9	86.6	55.5	63.3	89.3	75.8	64.9
15	22.9*	15.0*	51.1	19.6	1322.7*	109.0	711.9*	73.8

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TABLE C-153

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 2,4-DINITROTOLUENE ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	618.0	646.0	618.0	646.0	618.0	646.0	618.0	646.0
LAB NUMBER								
1	501.0	769.0	416.0	546.0	0.0*	627.0	494.0*	479.0*
2	563.3	595.9	527.6	567.2	497.2	537.0	401.0*	509.7
3	382.2	505.4	267.2	306.7	239.7	253.1	209.6*	255.0*
4	558.0	482.0	501.0	620.0	433.0	442.0	687.0	548.0
5	401.0	550.0	742.0	0.0*	348.0	397.0	1310.0*	640.0*
6	1770.0*	254.0	693.0	1930.0*	740.0	492.0	613.0	1700.0*
7	636.0	669.0	531.0	590.0	38.8	572.0	596.0	644.0
8	758.7	988.1	885.6	1099.7*	775.7	783.3	569.4	871.9
9	592.0	405.0	524.0	624.0	643.0	580.0	713.0	493.0
10	786.0	641.0	800.0	690.0	765.0	745.0	639.0	474.0
11	509.0	607.0	454.0	503.0	453.0	581.0	549.0	552.0
12	533.0	631.0	575.0	577.0	556.0	600.0	584.0	647.0
13	1505.3*	579.5	534.6	567.1	575.9	382.4	262.9*	*
14	726.8	738.6	628.4	678.6	494.1	487.4	630.3	795.3
15	299.6*	404.6*	1.9	406.2	9999.9*	1239.7*	5455.7*	6702.0*

TABLE C-154

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 4-BROMOPHENYL PHENYL ETHER ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	8.0	7.2	8.0	7.2	8.0	7.2	8.0	7.2
LAB NUMBER								
1	2.0	4.4	2.4	2.1	2.1	1.7	6.2	4.1
2	4.5	4.4	5.0	2.6	6.0	4.8	6.0	6.0
3	6.4	4.1	2.9*	2.4*	2.5*	3.3*	0.0*	0.0*
4	8.5	4.4	7.9	3.4	4.8	6.1	5.7	6.5
5	6.9	7.0	7.3	6.5	7.2	*	4.9	*
6	4.8	8.0	6.7	6.3	5.3	7.4	5.6	2.5
7	4.6	4.5	5.6	5.3	5.8	5.3	5.8	5.8
8	4.4	5.0	3.7*	0.7*	2.2	3.1	3.8	4.2
9	8.1	5.3	7.5*	6.4*	8.7*	7.6*	7.4*	6.0*
10	5.8	6.0	5.6	23.7*	8.0	7.7	8.6	1.7
11	4.1	4.3	4.5	4.5	4.8	3.7	4.6	4.6
12	5.9	6.6	8.5	6.4	7.2	7.1	7.1	6.3
13	8.8	0.0*	5.2	5.3	4.5	7.1	*	*
14	6.0	5.5	6.6	6.9	6.5	5.8	9.2	5.8
15	1.0*	1.3*	4.4	2.1	10.3	7.0	4.7	3.8

TABLE C-155

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 4-BROMOPHENYL PHENYL ETHER ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
LAB NUMBER								
1	47.5	46.9	40.3	45.3	47.2	37.6	49.1	48.2
2	48.1	43.8	47.2	43.4	48.4	52.6	52.7	49.9
3	40.5	34.6	30.5*	31.4*	26.6*	28.8*	15.0*	16.5*
4	57.6	64.4	51.3	43.6	49.1	51.3	58.2	38.4
5	0.2*	57.6	55.6	50.8	35.6	69.8	*	20.0
6	63.9	49.4	60.4	57.7	50.7	45.7	22.4	46.4
7	51.6	49.2	48.6	51.3	49.7	49.0	50.6	44.0
8	41.5	48.9	21.6*	34.4*	20.1*	30.2	48.1	29.4
9	54.7	49.3	73.3*	55.2*	67.3*	63.1*	62.6*	57.5*
10	176.0*	57.8	50.3	45.4	57.7	48.5	55.5	52.0
11	53.8	50.7	50.5	49.0	45.8	47.1	48.9	13.2
12	46.4	50.8	55.2	53.7	51.7	49.6	57.5	50.0
13	66.6	82.7*	46.8	42.2	57.4	46.4	21.3	*
14	61.1	57.5	56.8	51.8	62.9	50.3	57.4	51.4
15	19.0*	15.6*	52.8	17.2*	40.5	54.1	41.7	35.1

TABLE C-156

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 4-BROMOPHENYL PHENYL ETHER ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
LAB NUMBER								
1	498.0	688.0	375.0	526.0	409.0	477.0	441.0	466.0
2	444.1	446.0	432.2	45.3	461.9	440.4	361.4	425.4
3	226.8*	242.1	144.6*	151.3*	122.5*	153.7*	145.0*	100.0*
4	550.0	649.0	446.0	443.0	418.0	448.0	316.0	399.0
5	448.0	450.0	537.0	401.0	0.0*	371.0	49.9	300.0
6	544.0	242.0	507.0	573.0	476.0	317.0	348.0	218.0
7	506.0	502.0	507.0	593.0	31.9*	538.0	445.0	510.0
8	449.6	509.7	356.3*	335.2*	224.6*	415.0	323.1	527.3
9	648.0*	443.0	547.0*	779.0*	665.0*	653.0*	657.0*	744.0*
10	497.0	476.0	475.0	473.0	492.0	517.0	385.0	379.0
11	451.0	522.0	439.0	448.0	364.0	395.0	405.0	479.0
12	451.0	456.0	413.0	461.0	399.0	442.0	361.0	501.0
13	958.5*	563.9	471.1	422.5	453.8	282.7	96.0	*
14	497.7	489.8	455.3	473.6	448.3	522.6	488.6	504.7
15	150.7*	191.0*	362.4	149.3	366.0	343.0	321.1	272.5

TABLE C-157

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 4,4 -DDT ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	8.0	7.0	8.0	7.0	8.0	7.0	8.0	7.0
LAB NUMBER								
1	2.9	3.3	2.5	2.3	1.3	1.9	2.0	1.5
2	*	*	*	*	*	*	*	*
3	1.4	0.0*	0.0*	0.5	0.0*	0.0*	0.0*	0.0*
4	0.7	3.0	1.4	1.9	1.1	0.8	1.2	1.2
5	4.7	3.0	5.7*	5.1*	4.4	*	2.0	2.5
6	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	1.6	1.5	1.9	1.6	1.0	1.2	0.0*	3.6
8	4.5	2.2	2.1	0.0*	1.0	0.9	0.0*	1.9
9	9.1*	7.2*	7.2*	6.4*	7.1*	9.3*	9.4*	8.3*
10	3.7	1.7	3.3	4.3	3.5	4.0	2.8	0.7
11	3.7	3.2	2.0	2.9	3.8	3.9	3.4	2.5
12	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	1.4	4.4	4.3	3.7	3.0	3.5	6.9*	2.5
15	0.0*	0.0*	1.8	0.0*	0.0*	0.9	1.1	0.4

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TABLE C-158

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (2) **

RAW DATA FOR 4,4 -DDT ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	60.0	57.0	60.0	57.0	60.0	57.0	60.0	57.0
LAB NUMBER								
1	12.7	39.5	18.9	21.8	24.9	14.4	16.7	32.2
2	*	*	*	*	*	*	*	*
3	6.8	23.4	4.3	4.4	4.5	4.8	7.1*	3.7*
4	27.8	20.7	4.5	7.2	2.5	5.5	14.7	4.8
5	127.0*	458.0*	53.2*	26.5*	6.0	32.8	0.6	10.3
6	64.2	34.9	42.8	35.2	0.0*	28.7	0.0*	0.0*
7	35.5	26.8	15.1	15.2	12.4	14.5	42.3	50.0
8	42.5	53.0	11.5	21.2	4.2	12.8	18.7	9.2
9	55.0	48.7	38.4*	43.6*	34.1*	62.9*	50.0*	26.0*
10	34.7	25.4	34.9	24.3	23.7	20.1	22.0	22.1
11	44.6	43.0	17.9	19.6	37.1	35.1	16.6	21.6
12	3.9	9.8	60.5	0.0*	0.0*	0.0*	9.8	8.9
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	55.7	53.4	37.3	27.4	23.1	15.1	28.4	22.7
15	10.0	3.9	75.0	11.4	17.0	0.0*	9.4	7.6

TABLE C-159

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - B/N (?) **

RAW DATA FOR 4,4 -DDT ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	512.0	548.0	512.0	548.0	512.0	548.0	512.0	548.0
LAB NUMBER								
1	49.1	649.0	324.0	481.0	426.0	463.0	230.0	461.0
2	*	*	*	*	*	*	*	*
3	229.0	383.8	69.3	94.6	67.2	113.2	104.1*	65.7*
4	400.0	282.0	153.0	130.0	101.0	86.3	70.8	112.0
5	242.0	900.0	762.0*	1468.0*	456.0	1127.0	*	80.0
6	1290.0	523.0	1500.0	1820.0*	2470.0*	434.0	132.0*	127.0*
7	1040.0	1160.0	750.0	780.0	27.8	1040.0	850.0	1720.0*
8	605.0	1098.9	495.3	499.6	487.4	780.5	204.8	905.0
9	748.0	451.0	617.0*	922.0*	784.0*	728.0*	816.0*	725.0*
10	74.1	236.0	310.0	225.0	297.0	251.0	211.0	199.0
11	490.0	567.0	438.0	463.0	425.0	463.0	477.0	481.0
12	88.1	303.0	212.0	299.0	333.0	361.0	332.0	372.0
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*
14	493.1	469.3	450.1	460.9	423.3	614.5	590.9	500.6
15	125.2	265.4	1000.3	270.4	557.6	127.7	343.6	64.6

TABLE C-160

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR PENTACHLOROPHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	13.0	14.4	13.0	14.4	13.0	14.4	13.0	14.4
LAB NUMBER								
1	4.8	10.0	5.8	5.8	11.5	9.1	4.6	0.0*
2	11.4	5.5	8.4	8.1	15.8	12.8	0.0*	4.0
3	0.0*	18.2	18.4	15.1	0.0*	6.8*	12.0	0.0*
4	30.1	11.6	12.4	24.9	21.4	27.8	12.6	19.0
5	15.0	10.8	9.4	5.6	10.8	13.0	1.5*	2.7*
6	0.0*	0.0*	15.1	9.9	14.2	18.1	15.0	10.8
7	3.2	3.8	1.6	1.5	0.0*	1.9	6.4	1.9
8	0.0*	0.0*	24.5	38.5	0.0*	0.0*	0.0*	46.2*
9	20.6	22.6	6.1	22.2	19.8	12.4	4.4	7.4
10	13.5	13.6	11.2	15.6	11.5	16.4	16.7	16.8
11	41.6*	53.3*	35.8	0.0*	26.5*	39.7*	30.5	26.5
12	25.4	28.4	19.0	21.5	23.9	21.7	21.0	24.1
13	0.0*	0.0*	0.0*	0.0*	0.0*	25.7	*	*
14	12.2	33.2	0.0*	30.7	10.2	2.2	15.1	8.1
15	6.4	12.3	9.7	14.9	10.5	10.2	10.4	12.6

TABLE C-161

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR PENTACHLOROPHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	65.0	72.0	65.0	72.0	65.0	72.0	65.0	72.0
LAB NUMBER								
1	39.5	51.7	43.3	45.2	47.7	46.3	29.3	41.8
2	49.6	51.1	48.5	46.6	64.0	68.5	62.3	55.5
3	81.8	88.3	34.6	56.3	39.7*	24.5*	43.8	74.1
4	56.6	75.2	51.4	69.1	49.4	51.6	61.1	76.7
5	49.6	55.4	19.1	64.0	54.5	57.5	8.6*	7.8*
6	0.0*	32.5	59.3	55.5	67.5	76.1	58.9	36.4
7	30.5	49.1	42.3	42.5	34.5	32.3	52.5	14.3
8	71.8	78.0	113.5	65.2	85.6	73.7	61.3	79.5
9	73.7	140.0*	112.0	55.7	55.5	135.0*	21.9	32.4
10	49.4	61.2	53.2	63.2	65.7	48.3	47.6	49.0
11	80.1*	90.8*	69.2	73.0	70.6*	98.2*	42.1	45.8
12	73.7	78.5	72.7	65.8	74.9	81.9	74.7	90.3
13	219.5*	107.0	0.0*	44.3	0.0*	15.9	139.5*	*
14	76.0	58.2	62.8	33.5	44.3	47.5	37.4	72.9
15	49.4	47.4	55.8	70.8	59.9	57.1	71.2	56.9

TABLE C-162

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR PENTACHLOROPHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	480.0	432.0	480.0	432.0	480.0	432.0	480.0	432.0
LAB NUMBER								
1	343.0	372.0	295.8	292.8	320.8	286.8	341.6	293.6
2	410.9	302.2	374.3	285.0	458.7	333.4	437.7	399.1
3	366.2	313.4	225.3	270.2	225.1*	166.2*	210.1	211.8
4	418.0	355.0	497.0	515.0	435.0	430.0	455.0	403.0
5	389.0	373.0	95.7	11.7	276.0	433.0	40.4*	31.6*
6	405.5	330.5	458.0	568.0	209.0	553.0	436.0	362.0
7	396.0	436.0	421.0	382.0	444.0	327.0	418.0	474.0
8	911.6	948.9*	840.8	323.9	596.0	654.3	890.5*	403.1
9	834.0	734.0*	318.0	793.0	453.0	736.0	200.0	166.0
10	392.0	321.0	364.0	289.0	354.0	332.0	337.0	244.0
11	581.9*	603.3*	463.4	437.6	553.0*	433.8*	299.6	325.2
12	239.0	232.0	239.0	230.0	241.0	226.0	294.0	234.0
13	1259.6	496.5	20500.0*	1778.8*	821.4*	7048.9*	*	1816.5*
14	829.7	359.0	599.9	266.8	475.4	744.2	372.1	451.2
15	439.5	427.4	496.6	432.8	329.8	318.7	377.4	286.4

TABLE C-163

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR PHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	6.0	7.0	6.0	7.0	6.0	7.0	6.0	7.0
LAB NUMBER								
1	0.9	2.5	1.6	0.9	1.9*	2.6*	2.5	2.4
2	4.5	4.6	2.6	3.4	3.0	4.0	4.8	4.5
3	0.0*	7.1	0.0*	0.0*	2.9*	3.7*	14.2*	20.7*
4	8.6	2.9	2.3	7.1	4.9	7.9	5.1	4.0
5	7.2	2.1	5.0	1.3	1.8	4.5	0.0*	0.0*
6	1.6	13.1*	10.9*	0.6	4.2	1.0	3.8	293.5*
7	2.8	2.9	2.7	2.8	0.0*	2.6	2.4	2.4
8	3.1	2.5	3.0	1.8	3.2	2.9	5.3	5.5
9	3.5	3.8	3.9	2.1	3.9	4.3	4.9	4.0
10	4.0	3.7	3.6	4.7	6.2	3.7	3.0	3.2
11	2.0	2.4	3.0	3.3	2.3	2.7	3.1	3.3
12	4.2	4.8	3.8	4.8	4.0	4.6	2.6	5.3
13	7.0*	11.2*	13.2*	6.4*	11.6*	7.1*	11.9*	33.3*
14	5.6	3.3	4.6	13.6	4.2	5.7	6.8	4.3
15	5.1	7.6	18.9*	17.4	7.8	15.9*	7.3	6.1

TABLE C-164

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR PHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	70.0	63.0	70.0	63.0	70.0	63.0	70.0	63.0
LAB NUMBER								
1	17.3	26.0	13.7	20.5	22.1*	22.3*	22.2	20.7
2	40.6	40.0	34.2	39.9	50.0	27.1	38.5	38.9
3	53.0	31.1	8.4*	5.6*	23.7*	16.8*	55.9*	65.3*
4	53.3	46.4	75.7	40.1	47.3	51.9	75.6	27.2
5	36.8	21.5	23.4	22.7	39.4	18.4	70.0	0.0*
6	29.6	49.6	29.9	2.1	44.9	26.5	35.7	17.8
7	24.7	22.8	31.5	26.0	27.6	22.6	27.8	18.9
8	20.3	33.7	30.0	17.8	28.9	22.6	24.8	21.2
9	30.4	34.8	28.3	14.6	37.9	33.2	38.6	30.6
10	26.9	29.3	32.2	31.5	36.1	26.8	22.8	18.7
11	24.2	20.8	27.0	27.7	27.0	26.0	29.6	27.8
12	35.5	30.8	35.5	30.7	35.2	32.5	33.6	30.2
13	60.1*	48.9*	59.2*	58.1*	59.0*	57.1*	82.3*	93.8*
14	9.6	33.8	23.1	34.3	40.9	33.2	37.6	36.0
15	36.8	24.0	77.7	35.1	34.9	53.2	33.5	39.4

TABLE C-165

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR PHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	420.0	467.0	420.0	467.0	420.0	467.0	420.0	467.0
LAB NUMBER								
1	143.0	169.0	123.0	156.0	129.0*	124.0*	153.0	174.0
2	238.0	261.0	273.2	281.2	229.4	344.0	190.4	264.8
3	80.5	107.1	54.6*	92.7*	67.3*	70.1*	311.1*	309.9*
4	312.0	224.0	312.0	354.0	213.0	329.0	272.0	187.0
5	126.3	215.0	120.3	141.3	76.0	285.0	210.0	740.0*
6	334.6	179.6	161.0	261.0	135.3	190.3	231.5	348.5
7	147.0	200.0	168.0	175.0	157.0	184.0	151.0	181.0
8	143.5	226.7	210.0	238.9	234.5	247.3	241.1	233.7
9	230.0	278.0	111.0	244.0	211.0	284.0	232.0	313.0
10	195.0	201.0	198.0	181.0	170.0	195.0	156.0	146.0
11	127.8	181.7	155.4	165.1	157.5	166.2	134.7	155.7
12	154.0	168.0	166.0	178.0	140.0	162.0	152.0	172.0
13	339.6*	369.0*	352.6*	397.0*	357.8*	398.4*	*	468.6*
14	67.9	112.7	118.3	111.2	141.4	117.1	104.6	126.0
15	120.0	116.5	177.4	181.0	173.1	164.6	158.5	68.1

TABLE C-166

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2-CHLOROPHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	7.0	8.0	7.0	8.0	7.0	8.0	7.0	8.0
LAB NUMBER								
1	1.7	5.4	4.0	1.1	4.2	4.8	4.1	4.3
2	6.7	6.9	5.9	6.0	5.6	6.7	4.6	4.8
3	2.8	10.3	9.1	4.5	3.9*	4.7*	7.2	7.9
4	5.3	4.2	2.6	7.7	5.5	4.7	4.1	4.1
5	9.4	6.6	6.4	1.9	5.0	6.8	3.3	0.0*
6	5.2	6.0	7.3	5.4	6.5	4.6	5.9	5.3
7	5.4	5.4	5.6	5.7	0.0*	5.9	5.4	5.8
8	5.2	4.4	5.6	5.1	6.5	5.1	8.8	7.3
9	8.6	0.7	6.8	0.0*	7.9*	9.3*	8.1*	8.9*
10	7.8	7.5	7.5	9.5	6.3	8.1	6.6	7.6
11	4.9	6.0	6.1	6.7	4.6	6.4	6.1	6.2
12	12.9	15.9*	12.6*	14.7*	14.8*	14.9*	10.5	14.8*
13	11.2*	6.7*	7.4*	6.4*	11.1*	20.8*	14.0*	16.2*
14	5.8	9.5	6.0	20.9*	3.9	6.6	5.9	6.0
15	3.8	4.3	4.0	5.5	3.3	4.8	3.6*	6.2*

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TABLE C-167

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2-CHLOROPHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	80.0	72.0	80.0	72.0	80.0	72.0	80.0	72.0
LAB NUMBER								
1	38.7	58.5	26.4	55.3	47.7	48.9	45.7	45.4
2	70.3	69.6	66.8	58.1	78.9	54.5	68.3	60.2
3	110.9	71.7	53.8	46.1	44.2*	35.8*	56.4	67.7
4	52.4	48.0	76.2	45.3	44.2	42.1	66.0	34.6
5	69.3	52.3	55.3	51.0	67.0	53.6	48.0	57.6
6	71.7	57.0	53.5	94.1	56.9	66.0	47.2	28.3
7	62.7	67.8	72.5	65.7	70.5	54.1	76.0	49.0
8	48.2	53.6	61.1	44.5	74.9	47.4	64.2	44.7
9	88.0	83.2	26.0	15.9	91.0*	86.6*	93.0*	71.0*
10	64.2	72.6	69.9	70.9	90.2	61.4	57.0	45.5
11	58.1	50.1	62.1	58.0	63.6	60.4	66.5	59.8
12	97.1	88.3	100.0	84.8	96.8	91.2*	94.4	93.4
13	231.9*	137.4*	113.1*	168.4*	105.3*	124.6*	124.2*	146.6*
14	67.5	64.5	70.0	68.2	62.7	63.2	65.3	54.4
15	70.9	48.1	67.1	37.7	46.3	50.7	38.3*	42.2*

TABLE C-168

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2-CHLOROPHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	480.0	533.0	480.0	533.0	480.0	533.0	480.0	533.0
LAB NUMBER								
1	329.0	411.0	210.0	388.0	282.0	285.0	327.0	367.0
2	423.0	437.2	447.9	461.2	400.0	506.2	343.6	435.9
3	263.8	260.4	0.0*	225.4	164.0*	185.0*	342.4	476.0
4	303.0	265.0	336.0	290.0	247.0	330.0	279.0	219.0
5	31.0	424.0	304.9	338.9	289.0	462.0	364.1	470.1
6	395.0	418.0	547.0	641.0	180.0	443.0	355.0	423.0
7	372.0	468.0	403.0	429.0	390.0	441.0	348.0	466.0
8	318.5	323.3	329.7	338.2	316.8	556.3	354.4	409.6
9	530.0	605.0	222.0	617.0	483.0*	692.0*	557.0*	684.0*
10	453.0	408.0	404.0	382.0	363.0	458.0	361.0	328.0
11	311.2	462.5	340.6	399.7	376.0	372.0	312.5	336.4
12	245.0	256.0	251.0	259.0	232.0	255.0	249.0	256.0
13	1129.5*	917.4*	1426.3*	1259.9*	947.7*	1779.1*	*	1394.8*
14	408.1	430.3	484.3	409.5	469.0	471.0	325.2	377.7
15	243.0	196.9	234.3	213.7	206.2	229.2	230.3*	101.5*

TABLE C-169

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2-METHYL-4,6-DINITROPHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	80.0	72.0	80.0	72.0	80.0	72.0	80.0	72.0
LAB NUMBER								
1	3.6	13.8	15.2	8.4	26.7	14.2	18.7*	10.7*
2	64.4	52.2	50.1	42.1	64.9	67.5	52.7	47.3
3	0.0*	33.1	116.6	21.7	0.0*	5.6*	43.7	23.7
4	55.7	66.8	61.1	156.0*	79.2	80.6	104.0	63.1
5	4.8	74.9	4.7	27.8	102.0	97.6	173.5	158.1*
6	42.3	47.0	34.5	26.7	46.6	32.6	58.8	235.9*
7	27.7	14.4	26.3	16.7	0.0*	34.4	26.6	18.1
8	0.0*	39.8	80.4	50.8	114.8*	50.8*	204.3*	123.3*
9	85.9	77.3	83.3	85.4	97.3	81.9	91.0	82.5
10	130.0*	70.9*	83.3*	130.0*	110.0	71.8	108.0	63.3
11	34.6	42.9	40.0	0.0*	0.0*	36.1	0.0*	26.1
12	66.7	54.8	60.9	56.9	61.0	51.9	61.3	52.9
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	37.2	54.9	36.4	60.8	19.2	29.2	47.3	30.9
15	19.1	56.9	71.4	73.7	65.1	27.6	81.1	63.4

TABLE C-170

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2-METHYL-4,6-DINITROPHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	160.0	144.0	160.0	144.0	160.0	144.0	160.0	144.0
LAB NUMBER								
1	51.3	46.6	61.1	37.6	55.2	43.9	46.3*	54.3*
2	141.1	123.6	128.8	104.8	143.2	120.6	158.7	104.1
3	186.9	196.8	83.1	136.5	86.9*	60.3*	133.3	133.5
4	77.9	215.0	143.0	174.0	195.0	123.0	240.0	200.0
5	21.3	198.6	256.8	327.1*	338.8	259.2	230.8	214.0
6	95.2	148.0	91.9	80.3	111.0	99.6	71.3	55.9
7	77.8	88.7	84.0	73.7	91.7	71.0	108.0	58.1
8	142.1	227.4	256.2	148.7	500.3*	156.4*	535.7*	144.0*
9	195.0	161.0	205.0	94.6	190.0	185.0	179.0	173.0
10	166.0*	271.0*	306.0*	275.0*	332.0	156.0	254.0	194.0
11	136.0	18.3	120.2	9.7	124.6	105.8	114.9	107.3
12	114.0	101.0	122.0	90.5	116.0	108.0	119.0	122.6
13	0.0*	163.2	0.0*	0.0*	0.0*	0.0*	*	*
14	124.9	98.7	108.9	68.5	97.0	89.5	85.1	86.7
15	163.8	144.0	223.8	202.8	242.3	206.0	224.2	168.5

TABLE C-171

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2-METHYL-4,6-DINITROPHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	1067.0	960.0	1067.0	960.0	1067.0	960.0	1067.0	960.0
LAB NUMBER								
1	934.0	956.0	1055.0	830.0	801.0	782.0	900.0*	628.0*
2	1082.9	860.9	1047.7	280.5	1073.1	963.5	978.1	898.1
3	789.9	909.9	546.5	780.0	511.9*	512.9*	752.0	563.9
4	1370.0	1440.0	2020.0	2040.0*	1470.0	1510.0	2100.0	1290.0
5	937.7	981.3	635.0	1198.4	926.4	1575.2	801.6	459.0
6	1021.0	1001.0	999.0	910.0	534.0	881.0	1180.0	750.0
7	1110.0	1100.0	1140.0	1030.0	1140.0	975.0	956.0	1110.0
8	3025.1*	2336.5*	2685.8*	5794.2*	2089.4*	9225.0*	2713.8*	6966.9*
9	1260.0	1250.0	698.0	1260.0	1280.0	1040.0	1070.0	1300.0
10	2530.0*	2040.0*	2270.0*	1080.0*	1290.0	2153.0	2130.0	1105.0
11	1111.4	871.0	993.8	832.2	1095.3	876.6	942.2	883.9
12	358.0	348.0	906.0	750.0	339.0	339.0	341.0	350.0
13	3539.2*	1489.7	23300.0*	4253.8*	2406.9*	19311.0*	*	2609.8*
14	1440.1	853.6	1337.7	807.0	1017.8	1103.7	937.3	703.3
15	1295.2	978.4	1419.7	1074.6	1098.8	1157.4	1189.0	667.4

TABLE C-172

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2-NITROPHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	14.0	15.6	14.0	15.6	14.0	15.6	14.0	15.6
LAB NUMBER								
1	2.7	11.3	7.5	7.6	7.5	11.5	8.7	8.7
2	12.5	12.4	11.1	11.0	11.0	12.5	10.5	10.5
3	0.0*	23.6	8.6	11.0	2.9*	0.0*	26.2	18.9
4	11.0	9.3	7.6	18.3	13.8	11.8	9.6	9.6
5	17.4	14.2	16.5	9.3	10.2	14.2	0.9	9.2
6	9.7	10.8	13.8	8.7	12.2	8.6	10.9	10.2
7	9.5	10.7	10.4	10.3	0.0*	12.8	10.5	13.0
8	6.7	9.4	15.3	10.2	8.7	9.3	13.4	21.8
9	15.4	16.1	12.6	14.5	15.1	23.3	17.8	21.1
10	18.2	14.4	14.1	22.1	13.6	15.4	14.9	14.8
11	25.0	31.9	19.5	26.9	24.2	24.5	22.3	22.2
12	21.6	23.1	20.8	24.6	22.0	21.9	21.4	24.3
13	19.2	5.2	6.1	11.4	18.0	58.0*	*	*
14	13.5	20.7	12.9	29.6	5.6	14.1	15.1	12.2
15	4.4*	7.3*	5.9	9.6	4.9	5.4	5.9	10.9

TABLE C-173

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2-NITROPHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	70.0	78.0	70.0	78.0	70.0	78.0	70.0	78.0
LAB NUMBER								
1	51.4	94.1	60.9	81.6	55.0	78.1	58.4	64.4
2	63.6	75.4	60.1	63.6	69.6	63.9	64.0	69.0
3	113.1	89.0	69.5	55.5	47.7*	36.9*	95.1	121.7
4	48.8	54.2	84.4	55.4	47.4	54.6	79.4	45.2
5	76.3	75.5	65.8	71.0	85.0	77.8	22.9	22.9
6	66.9	76.3	54.9	81.8	56.5	78.1	45.6	36.4
7	60.9	90.4	67.0	78.6	70.0	72.6	77.5	63.2
8	50.1	117.0	91.2	56.4	70.1	64.9	67.5	61.3
9	76.7	105.0	91.4	45.2	88.8	118.0	100.0	90.0
10	59.5	102.0	77.6	93.3	105.0	69.9	66.4	62.8
11	95.4	102.3	80.3	77.0	80.4	104.8	80.1	99.2
12	78.5	84.4	81.9	78.4	80.8	88.3	80.9	101.3
13	348.5*	199.1*	53.7	218.0*	38.8	40.4	73.4*	341.7*
14	89.5	71.7	68.0	83.4	71.9	70.9	66.9	78.5
15	56.7*	53.8*	61.6	46.4	47.4	57.7	32.2	44.8

TABLE C-174

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2-NITROPHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	520.0	468.0	520.0	468.0	520.0	468.0	520.0	468.0
LAB NUMBER								
1	772.0	620.0	622.0	711.0	630.0	434.0	687.0	672.0
2	487.6	417.4	497.6	428.5	507.7	478.3	422.0	438.3
3	278.3	312.9	197.7	291.1	224.5*	189.0*	320.5	367.2
4	380.0	285.0	447.0	430.0	364.0	345.0	328.0	262.0
5	486.0	541.0	421.0	441.0	447.0	552.0	513.3	311.3
6	453.0	395.0	514.0	548.0	233.0	425.0	434.0	399.0
7	525.0	492.0	564.0	481.0	580.0	456.0	454.0	559.0
8	693.3	639.5	701.0	516.2	567.4	620.6	730.0	555.3
9	587.0	646.0	339.0	915.0*	555.0	750.0	713.0	604.0
10	667.0	490.0	588.0	382.0	448.0	577.0	564.0	354.0
11	603.2	640.4	533.4	498.2	609.5	471.8	475.6	420.4
12	263.0	253.0	270.0	260.0	248.0	252.0	270.0	256.0
13	1859.5*	978.2	2527.0*	1769.6*	1332.4*	2905.2*	*	1480.5*
14	666.1	452.6	759.5	420.5	567.9	568.3	465.2	410.8
15	392.0*	259.8*	373.3	279.4	294.9	321.5	344.7	161.7

TABLE C-175

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4-DICHLOROPHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	8.0	9.0	8.0	9.0	8.0	9.0	8.0	9.0
LAB NUMBER								
1	2.3	5.9	4.3	3.4	5.0	5.8	5.1	4.9
2	8.7	8.6	7.5	7.8	8.4	8.9	3.8	4.0
3	2.5	11.8	7.2	5.7	1.8*	3.5*	14.5*	11.3
4	5.9	4.9	4.4	9.6	4.6	7.4	5.4	5.8
5	9.8	8.7	13.5	8.5	6.6	9.0	4.8	6.6
6	5.6	6.9	8.0	5.0	6.4	6.1	6.2	6.3
7	7.0	6.2	6.5	6.6	0.8	7.7	7.4	6.2
8	5.0	5.2	5.4	5.0	5.4	4.9	9.4	8.7
9	8.1	9.4	7.6	2.7	8.9	10.8	8.6	9.5
10	8.6	8.7	8.1	11.0	7.6	9.4	7.8	9.3
11	9.0	10.9	8.8	10.1	7.4	9.8	9.6	9.2
12	11.0	12.7	10.7	12.3	10.8	11.9	8.2	12.2
13	7.6	2.9	7.4*	18.3*	20.0*	22.7*	21.3*	19.7*
14	7.6	14.3	7.4	31.8*	9.9	9.4	8.3	8.2
15	3.4	5.3	3.8*	5.7*	3.4*	3.9*	4.2*	6.9*

TABLE C-176

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4-DICHLOROPHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	90.0	81.0	90.0	81.0	90.0	81.0	90.0	81.0
LAB NUMBER								
1	45.3	65.1	55.8	57.1	61.2	52.7	53.0	55.2
2	89.3	84.1	84.0	72.8	91.9	73.3	89.5	75.4
3	130.9	85.4	41.8	53.4	51.4*	33.9*	99.0	98.1
4	71.2	56.0	107.0	60.9	55.9	52.2	142.0	54.8
5	96.4	69.4	80.5	76.0	129.0	75.3	48.9	41.1
6	81.8	67.3	58.7	81.0	97.4	79.2	70.6	31.7
7	73.9	84.2	87.7	75.7	79.0	67.7	89.8	59.9
8	61.9	74.1	80.1	57.9	93.1	61.0	85.1	58.4
9	101.0	88.4	70.3	38.5	102.0	97.2	100.0	77.4
10	73.3	83.1	82.2	80.6	104.0	69.2	70.6	56.4
11	78.5	68.1	68.1	69.3	78.6	75.7	67.0	73.9
12	93.2	84.3	97.7	73.2	94.0	87.5	88.3	88.2
13	247.1*	187.3*	106.0*	160.7*	126.8*	118.8*	147.0*	81.9*
14	103.6	68.3	88.7	85.8	77.7	72.3	85.6	68.6
15	84.0	61.4	70.5*	46.7*	56.9*	55.5*	46.6*	47.1*

TABLE C-177

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4-DICHLOROPHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	540.0	600.0	540.0	600.0	540.0	600.0	540.0	600.0
LAB NUMBER								
1	399.0	541.0	387.0	466.0	361.0	390.0	404.0	459.0
2	496.1	504.2	497.5	518.2	495.0	578.5	443.8	537.9
3	270.9	362.9	138.5	293.7	164.5*	186.7*	484.5	479.2
4	455.0	388.0	522.0	577.0	353.0	533.0	376.0	352.0
5	443.0	539.0	394.0	469.0	418.0	591.0	388.0	284.0
6	442.0	469.0	541.0	604.0	224.0	531.0	428.0	499.0
7	434.0	544.0	472.0	512.0	460.0	530.0	412.0	546.0
8	597.7	497.2	490.1	549.2	456.1	767.2	491.7	601.2
9	629.0	649.0	309.0	714.0	567.0	777.0	626.0*	711.0
10	525.0	486.0	473.0	443.0	429.0	530.0	431.0	409.0
11	424.2	576.3	400.5	465.8	445.4	442.3	370.4	400.1
12	294.0	311.0	303.8	328.0	276.0	307.0	292.0	306.0
13	1211.3*	1020.6*	1443.7*	1561.5*	968.1*	1485.9*	*	1468.7*
14	650.1	471.7	699.6	445.0	579.6	651.2	411.6	443.7
15	281.4	241.2	281.3*	263.5*	252.0*	262.0*	257.2*	136.0*

TABLE C-178

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4-DIMETHYLPHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	9.0	10.0	9.0	10.0	9.0	10.0	9.0	10.0
LAB NUMBER								
1	1.5*	3.6*	0.4	0.2	2.7*	3.3*	0.0*	2.0
2	9.9	9.1	5.8	6.3	5.9	7.4	1.2	1.6
3	12.8	18.1	0.0*	0.0*	7.0	7.9	22.4*	19.2*
4	7.9*	2.0*	4.9	5.7	4.4	6.8	2.2	2.7
5	13.8	7.6	5.4	4.4	7.3	6.2	1.7*	0.0*
6	4.6	0.0*	6.2	0.0*	0.0*	5.5	0.0*	0.0*
7	10.4	8.9	9.6	10.5	2.4	7.8	11.1	7.7
8	10.1	10.4	11.6	8.3	10.7	9.6	13.0	10.3
9	11.7	7.9	10.1	0.7	10.7	11.5	9.8	8.3
10	12.4	13.2	12.7	14.4	12.2	12.3	10.4	6.7
11	6.9	7.3	7.7	7.0	6.0	8.1	8.2	6.8
12	14.4*	24.1*	19.5*	22.1*	19.2*	21.7*	0.0*	0.5*
13	24.0*	16.2*	11.4*	25.7*	25.1*	29.9*	*	48.6*
14	10.5	35.2*	1.3	47.8*	6.7	13.7	5.8	9.3
15	13.9	21.9	0.3*	3.3*	1.7*	0.5*	1.3	4.8

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TABLE C-179

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4-DIMETHYLPHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	100.0	90.0	100.0	90.0	100.0	90.0	100.0	90.0
LAB NUMBER								
1	27.0*	41.1*	12.2	11.5	31.9*	23.9*	10.1	25.2
2	83.7	78.4	74.1	65.4	88.6	53.9	66.2	63.4
3	140.0*	84.9	0.0*	0.0*	45.9	32.6	102.3*	117.0*
4	24.3*	41.8*	33.2	42.1	38.1	32.4	29.2	21.1
5	73.5	61.3	64.2	48.0	80.6	66.7	5.5*	0.0*
6	75.4	0.0*	56.6	0.0*	0.9	68.4	3.0*	0.0*
7	69.3	79.5	83.6	73.7	44.3	36.0	77.0	52.7
8	71.0	101.0	86.5	57.4	81.5	68.1	21.1	31.4
9	72.7	62.0	39.2	26.8	74.7	89.3	87.0	68.0
10	79.2	85.3	87.9	86.6	102.0	72.4	48.5	58.7
11	64.5	52.6	51.2	56.9	62.9	59.2	54.0	62.7
12	122.2*	121.0*	139.0*	61.4*	132.0*	116.3*	6.2*	0.0*
13	304.3*	162.7*	1212.2*	156.1*	59.3*	121.6*	113.0	39.6
14	62.4	86.2	56.8	57.4	79.2	78.8	71.4	55.8
15	114.0*	101.7	2.0*	7.6*	11.4*	1.9*	13.4	8.5

TABLE C-180

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4-DIMETHYLPHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	600.0	667.0	600.0	667.0	600.0	667.0	600.0	667.0
LAB NUMBER								
1	250.0*	319.0*	242.0	158.0	116.0*	160.0*	202.5	120.5
2	509.3	521.8	505.3	539.2	473.7	603.0	407.7	495.9
3	258.1	328.5	114.7*	227.3*	149.8	165.9	582.8*	529.5*
4	288.0*	163.0*	329.0	158.0	214.0	301.0	105.0	101.0
5	330.3	477.0	356.7	363.7	369.1	0.0*	1.8*	16.1*
6	10.6	398.3	66.1	528.7	6.8	401.7	5.5*	62.8*
7	385.0	504.0	438.0	481.0	358.0	391.0	378.0	441.0
8	574.7	596.3	556.0	505.0	503.0	590.4	429.9	343.7
9	532.0	627.0	294.0	654.0	491.0	769.0	631.0	659.0
10	505.0	482.0	467.0	450.0	428.0	500.0	201.0	376.0
11	318.2	449.3	286.3	359.1	366.4	355.4	295.1	317.5
12	623.0*	722.0*	766.0*	715.0*	545.0*	438.0*	0.0*	141.0*
13	1130.7*	920.9*	1744.5*	1312.2*	767.2*	2332.5*	*	709.6
14	316.0	522.8	268.2	371.4	498.6	302.6	19.3	245.5
15	348.8	439.0	21.2*	140.7*	34.8*	58.4*	106.4	88.1

TABLE C-181

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4-DINITROPHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	100.0	90.0	100.0	90.0	100.0	90.0	100.0	90.0
LAB NUMBER								
1	0.0*	11.9	16.4	4.4	79.1	16.7	39.2	8.8
2	82.2	62.1	59.0	53.0	76.9	77.7	50.8	43.1
3	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
4	155.0	173.0	402.0*	392.0*	257.0*	238.0*	213.0*	186.0*
5	0.1	9.9	9.2	8.7	4.0*	4.2*	51.9	22.8
6	0.0*	60.6	36.4	35.4	66.5	40.3	122.0	53.0
7	27.2	4.0	16.7	10.6	0.0*	33.0	17.6	13.7
8	0.0*	0.0*	67.9	0.0*	16.3	0.0*	79.4	0.0*
9	120.0	92.6	43.8	95.3	124.0	109.0	135.0	140.0
10	70.1	123.0	131.0	65.9	164.0	117.0	56.2	101.0
11	0.0*	0.0*	0.0*	0.0*	0.0*	120.0	0.0*	0.0*
12	74.1	19.9	73.9	73.0	77.2	48.8	78.3	61.6
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	157.3
14	39.1	48.9	30.5	69.3	5.9	10.3	40.8	19.4
15	0.6	48.2	88.8*	89.6*	63.4	2.2	126.8	78.8

TABLE C-182

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4-DINITROPHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	200.0	180.0	200.0	180.0	200.0	180.0	200.0	180.0
LAB NUMBER								
1	66.3	58.8	79.4	40.3	130.0	54.2	52.4	129.0
2	172.5	158.5	163.5	133.2	169.5	149.0	191.4	119.8
3	119.0	81.3	0.0*	64.8*	0.0*	0.0*	129.0*	98.0*
4	82.2	456.0*	507.0*	705.0*	416.0*	311.0*	1010.0*	121.0*
5	29.3	18.7	24.4	64.0	86.0*	60.2*	91.7	98.7
6	107.1	204.0	126.0	119.0	228.0	144.0	109.0	84.7
7	84.8	77.9	81.8	71.2	142.0	98.0	186.0	93.6
8	146.0	208.4	420.3	290.7	159.0	369.1	359.9	430.7*
9	253.0	254.0	296.0	126.0	185.0	310.0	293.0	239.0
10	331.0	155.0	255.0	255.0	186.0	291.0	189.0	122.0
11	84.4	160.0	300.0	0.0*	250.0	233.7	200.0	0.0*
12	150.4	116.0	190.0	127.6	146.0	149.0	180.0	188.9
13	0.0*	16.5	0.0*	0.0*	0.0*	0.0*	*	*
14	169.4	94.6	122.4	53.4	93.4	94.8	67.0	99.8
15	15.7	102.7	471.8*	399.3*	625.0*	436.5	119.1	294.0

TABLE C-183

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4-DINITROPHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	1333.0	1200.0	1333.0	1200.0	1333.0	1200.0	1333.0	1200.0
LAB NUMBER								
1	1750.0	3740.0	4083.0	1541.0	1432.0	2579.0*	1601.0	1490.0
2	1189.8	1069.7	1513.9	1011.5	1511.5	1442.3	1289.5	1251.8
3	*	*	340.6*	*	*	280.0*	*	986.0*
4	3070.0	2962.0	2440.0*	3990.0*	1720.0*	4490.0*	3970.0*	2700.0*
5	544.4	2781.1	256.8	1282.0	690.6*	1295.0*	506.4	572.0
6	1861.0	1101.0	1508.0	1455.0	674.0	1471.0	1407.0	1023.0
7	2860.0	2400.0	1950.0	2560.0	2650.0	1840.0	2140.0	3050.0
8	12900.0*	7842.4*	9341.6*	5640.8*	4753.0	9325.3*	12471.0*	8632.3*
9	1810.0	1780.0	709.0	2010.0	1800.0	1580.0	1560.0	1870.0
10	2080.0	2110.0	2360.0	2780.0	3330.0	1718.0	1710.0	2380.0
11	1976.1	2111.2	1944.5	1945.3	2483.4	2001.5	1415.5	1060.5
12	1870.0	1620.0	1740.0	1610.0	1680.0	1450.0	2130.0	1660.0
13	2521.2	678.0	2792.3	2468.6	2061.3	1851.9	*	1898.7
14	2090.3	1304.0	2330.1	1193.6	1485.6	1572.9	1514.3	1015.8
15	4351.3	3306.1	5311.7*	3638.0*	3406.4	4079.9*	4137.9*	2519.6

TABLE C-184

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4,6-TRICHLOROPHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	11.9	13.2	11.9	13.2	11.9	13.2	11.9	13.2
LAB NUMBER								
1	3.0*	6.5*	5.6	11.2	6.4	7.5	7.5	5.7
2	12.2	12.6	11.3	11.5	13.3	15.0	9.8	9.8
3	5.6	20.7	29.6*	26.8	7.4	10.2	22.1	7.7
4	7.8	6.9	6.3	14.8	6.3*	7.1*	6.6	7.8
5	12.4	11.6	22.8*	11.5	9.3	11.9	7.9	9.5
6	10.0	10.8	11.9	8.1	12.3	10.6	12.7	13.3
7	9.4	8.4	9.5	8.7	0.3	10.2	10.7	9.0
8	5.5	7.0	10.0	8.6	7.3	7.5	6.8	14.8
9	15.4*	14.1*	12.2	14.8	13.8	13.3	12.4	13.5
10	11.8	13.2	11.9	14.5	11.5	13.1	10.5	13.5
11	14.9	18.9	12.6	14.8	17.5	16.0	24.0	13.6
12	13.6	16.3	13.7	16.1	14.5	15.8	10.9	14.4
13	10.6	2.6	3.1	20.1	28.4*	33.6*	*	36.0*
14	12.1	22.9	12.1	27.9	8.4	12.8	13.3	12.1
15	5.4	7.4	5.4*	8.1*	5.2	7.1	5.8*	8.1*

TABLE C-185

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4,6-TRICHLOROPHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	59.0	66.0	59.0	66.0	59.0	66.0	59.0	66.0
LAB NUMBER								
1	24.6*	42.1*	53.6	40.5	35.8	36.0	29.5	40.3
2	61.2	68.7	58.0	59.6	62.3	66.0	65.4	69.1
3	100.7	71.0	118.5*	134.5*	46.0	34.3	49.8	119.6*
4	33.5	50.7	44.9	38.3	32.8*	34.6*	44.3	53.7
5	58.7	56.1	51.6	60.9	112.2*	58.2	36.7	38.3
6	62.4	73.4	52.0	62.4	59.4	76.4	53.6	35.8
7	47.0	63.7	55.9	57.9	47.8	54.5	56.4	47.6
8	43.8	62.4	57.1	53.7	53.7	52.9	52.7	49.9
9	66.5*	77.4*	72.8	47.5	72.7	87.7	65.8	67.9
10	50.0	61.8	51.7	62.1	64.1	155.8*	46.4	47.0
11	63.6	70.1	55.2	62.9	57.1	73.0	57.2	66.4
12	60.4	66.6	64.0	56.8	62.2	68.5	59.8	71.3
13	172.9*	143.0*	42.1	119.3*	24.1	73.8	175.1*	181.7*
14	87.6	63.2	65.9	67.4	59.6	64.2	56.2	66.8
15	51.7	47.0	43.2*	40.1*	40.5	44.5	34.3*	37.1*

TABLE C-186

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 2,4,6-TRICHLOROPHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	440.0	396.0	440.0	396.0	440.0	396.0	440.0	396.0
LAB NUMBER								
1	286.0*	310.0*	429.0	280.0	267.0	244.0	292.5	272.5
2	427.1	355.1	412.7	355.4	452.9	409.0	400.7	389.1
3	239.5	254.7	299.5	423.2	165.1	146.3	294.6	342.8
4	303.0	249.0	514.0	435.0	253.0*	283.0*	299.0	182.0
5	382.0	345.0	286.0	293.0	332.0	413.0	270.0	182.0
6	460.0	396.0	484.0	474.0	234.0	438.0	513.0	420.0
7	354.0	378.0	387.0	352.0	372.0	363.0	349.0	368.0
8	527.4	370.3	455.9	207.6	408.0	478.6	418.1	282.5
9	531.0*	467.0*	281.0	510.0	494.0	532.0	517.0	515.0
10	379.0	305.0	347.0	297.0	349.0	325.0	319.0	275.0
11	395.5	353.7	376.5	362.0	399.0	327.2	361.6	334.0
12	266.0	251.0	273.0	257.0	252.0	250.0	271.0	251.0
13	959.3*	585.3*	1283.4*	1155.1*	764.4*	1039.9*	*	1106.7*
14	677.0	374.3	724.5*	351.2	541.8	576.8	428.2	368.7
15	273.3	238.5	280.2*	262.9*	279.8	233.4	246.9*	236.6*

TABLE C-187

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 4-CHLORO-3-METHYLPHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	9.0	10.0	9.0	10.0	9.0	10.0	9.0	10.0
LAB NUMBER								
1	1.6	4.3	2.5*	0.1*	4.4	3.9	5.2	3.7
2	10.0	9.0	7.8	8.4	8.1	8.6	1.7	2.0
3	3.6	10.8	0.0*	0.0*	1.5*	4.2*	15.3	7.5
4	5.0	3.8	3.1	5.7	3.9	5.6	4.6	4.9
5	10.5	9.0	10.6	5.9	7.6	9.1	5.3*	4.5*
6	6.1	6.8	8.1	0.0*	3.0	7.4	3.7*	6.6*
7	7.8	7.1	7.7	7.6	1.5	9.4	9.9	7.8
8	6.0	6.1	5.8	6.1	7.6	5.8	13.4	11.0
9	8.6	9.2	9.0	1.2	9.8	11.0	8.9	10.8
10	9.6	9.5	9.9	11.9	9.2	10.4	8.5	9.7
11	9.2	10.5	9.5	10.9	8.0	11.1	11.2	10.9
12	13.7	15.4	12.9	14.3	13.4	14.6	6.1	11.3
13	12.1	2.9	3.6	12.2	34.9*	70.0*	*	*
14	11.3	17.7	10.3	30.3*	8.9	11.4	11.6	8.9
15	5.2	5.4	2.9	5.6	2.7	3.0	2.7	7.0

TABLE C-188

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 4-CHLORO-3-METHYLPHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	100.0	90.0	100.0	90.0	100.0	90.0	100.0	90.0
LAB NUMBER								
1	42.7	58.7	13.3*	41.1*	60.9	51.4	48.9	51.7
2	92.2	87.7	87.4	75.3	97.9	69.2	81.1	70.8
3	160.2	96.0	8.6*	3.5*	55.3*	29.8*	104.3	114.9
4	50.6	52.0	65.1	39.6	49.1	37.9	64.4	42.8
5	96.8	74.0	66.8	77.2	110.0	76.4	47.8*	35.3*
6	92.4	48.0	72.4	11.3	39.8	87.1	56.2*	13.6*
7	81.6	88.1	99.3	81.7	83.7	71.3	93.2	62.0
8	72.4	87.1	89.6	65.8	96.2	69.2	77.7	65.0
9	105.0	98.7	27.2	19.1	106.0	104.0	105.0	81.5
10	79.2	86.5	89.9	85.1	108.0	75.0	74.4	62.0
11	79.1	68.3	84.0	76.7	86.4	83.6	87.1	82.8
12	112.3	99.2	116.0	87.1	113.0	102.0	96.1	67.1
13	340.8*	175.0*	97.6	163.5*	120.6*	111.2*	128.1*	333.4*
14	6.8	98.7	87.6	80.3	91.7	86.1	84.6	61.9
15	95.0	77.3	58.7	54.6	65.3	46.9	57.8	51.6

TABLE C-189

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 4-CHLORO-3-METHYLPHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	600.0	667.0	600.0	667.0	600.0	667.0	600.0	667.0
LAB NUMBER								
1	386.0	508.0	254.0*	372.0*	317.0	364.0	372.0	406.0
2	525.7	545.4	533.8	548.4	543.7	638.7	452.5	548.7
3	344.0	464.3	118.3*	262.3*	215.6*	263.3*	545.1	582.9
4	399.0	359.0	430.0	485.0	277.0	449.0	282.0	256.0
5	463.0	0.0*	397.0	492.0	445.0	646.0	129.0*	212.0*
6	313.0	480.0	356.0	622.0	117.0	592.0	105.0*	397.0*
7	459.0	616.0	503.0	553.0	477.0	592.0	458.0	556.0
8	777.0	610.4	637.1	739.3	523.5	787.1	613.8	633.1
9	643.0	700.0	278.0	629.0	594.0	816.0	669.0	832.0
10	548.0	512.0	496.0	480.0	458.0	557.0	430.0	417.0
11	526.7	754.4	551.7	638.8	611.7	615.3	431.3	577.9
12	368.0	654.0	375.0	698.0	346.0	381.0	341.0	623.0
13	1239.3*	979.8	1839.8*	1362.5*	967.7*	2060.3*	*	1168.1*
14	456.3	433.1	564.0	407.3	536.2	583.3	394.6	422.6
15	406.7	352.5	333.4	346.8	283.6	329.9	342.3	170.6

TABLE C-190

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 4-NITROPHENOL ANALYSIS BY WATER TYPE
LOW YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	1	2	1	2	1	2	1	2
TRUE CONC:	21.6	24.0	21.6	24.0	21.6	24.0	21.6	24.0
LAB NUMBER								
1	0.0*	2.8	3.2	0.0*	4.3	0.0*	0.0*	5.8
2	8.9	13.1	0.0*	0.0*	3.8	5.5	0.0*	0.0*
3	0.0*	5.3	7.1	23.5	0.0*	0.0*	0.0*	0.0*
4	41.7*	19.5	18.9*	32.6*	26.0	28.0	30.5	18.4
5	17.0	8.2	6.8	4.4	13.3	5.6	13.0	0.0*
6	0.0*	2.0	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*
7	3.3	3.3	1.5	4.8	0.0*	2.4	3.8	0.8
8	6.8	4.2	12.2	10.6	0.0*	8.3	31.9	26.5
9	12.5	36.9	55.6*	10.0	29.8	22.8	13.2	19.6
10	20.6	10.0	8.5	7.0	6.1	13.7	3.2	9.6
11	23.8	30.8	17.0	28.2	12.4	15.2	20.5	28.4
12	15.1	12.8	16.3	12.3	16.6	12.7	20.0	13.4
13	0.0*	0.0*	0.0*	0.0*	0.0*	0.0*	*	*
14	0.0*	0.0*	0.0*	0.0*	21.0	0.0*	56.3	67.2*
15	9.2	12.6	12.2*	21.3*	14.0*	15.3*	34.2*	26.2*

TABLE C-191

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 4-NITROPHENOL ANALYSIS BY WATER TYPE
MEDIUM YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	3	4	3	4	3	4	3	4
TRUE CONC:	108.0	120.0	108.0	120.0	108.0	120.0	108.0	120.0
LAB NUMBER								
1	33.0	43.6	37.4	31.2	35.1	49.4	41.9	45.3
2	45.1	309.1*	34.5	35.5	76.4	49.9	6.9*	7.1*
3	123.8	38.2	63.7	74.1	0.0*	31.9*	90.2	106.5
4	92.5	100.0	154.0*	79.6*	142.0	100.0	139.0	80.1
5	59.6	44.7	30.5	98.5	78.3	36.2	48.2	48.0
6	66.7	130.0	0.0*	0.0*	66.1	102.0	196.0*	67.5
7	9.3	12.6	16.3	26.3	16.3	14.1	21.4	16.1
8	27.2	105.7	69.2	72.7	68.5	69.8	69.5	47.3
9	110.0	70.8	60.3	112.0	46.2	78.0	65.7	49.6
10	55.6	109.0	92.7	102.0	100.0	61.8	82.7	58.7
11	57.0	51.3	58.8	62.6	56.6	85.5	63.2	78.9
12	58.8	60.3	60.1	55.4	59.3	62.6	57.2	74.1
13	0.0*	114.1	0.0*	0.0*	0.0*	0.0*	*	*
14	84.1	51.4	84.2	0.0*	63.6	58.4	72.0	96.6
15	51.1	65.1	115.8*	146.0*	126.7*	175.9*	141.8*	177.9*

TABLE C-192

ENVIRONMENTAL MONITORING AND SUPPORT LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
ENVIRONMENTAL PROTECTION AGENCY

** EPA METHOD 625 VALIDATION STUDY - ACIDS **

RAW DATA FOR 4-NITROPHENOL ANALYSIS BY WATER TYPE
HIGH YOUDEN PAIR, UNITS - UG/L

	DISTILLED WATER		TAP WATER		SURFACE WATER		INDUSTRIAL EFFLUENT	
AMPUL NO:	5	6	5	6	5	6	5	6
TRUE CONC:	800.0	720.0	800.0	720.0	800.0	720.0	800.0	720.0
LAB NUMBER								
1	320.0	286.0	284.0	318.0	332.0	236.0	391.0	336.0
2	1882.1*	1622.1*	431.5	233.3	356.2	269.0	331.8*	259.1*
3	402.8	369.9	313.4	353.1	320.1*	227.1*	271.6	296.8
4	626.0	434.0	788.0*	660.0*	364.0	516.0	690.0	379.0
5	276.0	0.0*	215.0	215.0	155.0	518.0	199.0	257.0
6	430.0	347.0	420.0	575.0	352.0	695.0	807.0	414.0
7	331.0	364.0	368.0	613.0	361.0	212.0	326.0	338.0
8	633.5	767.0	869.1	741.3	840.4	905.8	1035.7	108.6
9	1120.0	405.0	229.0	540.0	1200.0*	391.0	578.0	1470.0*
10	834.0	801.0	872.0	494.0	563.0	799.0	777.0	306.0
11	344.1	379.0	527.5	430.8	477.1	409.3	454.3	410.2
12	249.0	238.0	264.0	245.0	238.0	220.0	262.0	248.0
13	852.6	381.8	4649.4*	602.8	537.3	2060.8*	*	750.0*
14	349.1	288.6	249.1	297.8	576.4	307.6	393.1	175.2
15	555.3	579.9	1264.7*	1185.2*	1308.1*	1091.8*	1164.9*	856.8*

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TABLE C-193

BLANK VALUES FOR VALIDATION ANALYSES - DISTILLED WATER

COMPOUND	LABORATORY														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ACENAPHTHENE	0	0	0	0	0	0.8	0	0	0	0	0	0	0	0	0
ACENAPHTHYLENE	0	0	0	0	0	0.8	0	0	0	0	0	0	0	0	0
ALDRIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTHRACENE	0	0	0	0	0	1.2	0	0	0	0	0	0	0	0	0
B-BHC	0	0	0	0	0	0	0	0	0	0	0	0	0	26.1	0
BENZO(A)ANTHRACENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(A)PYRENE	0	0	0	0	0	0	0	0	0	0	0	0	0	3.1	0
BENZO(B)FLUORANTHENE	0	2.8	0	0	0	0	0	0	0	0	0	0	0	0	0
BIS(2-CHLOROETHYL)ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0
DI-N-BUTYLPHTHALATE	2.8	2.3	0	1.4	1.1	0	0	2.7	0.3	1.2	0	0	0	0	0
DIBENZO(A,H)ANTHRACENE	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	0
DIETHYL PHTHALATE	0	0	0	7.8	0	0	0	3.1	0	0	0	0	0	0	0
ENDOSULFAN SULFATE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0
FLUORANTHENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPTACHLOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ISOPHORONE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE	0	0	0	0.4	0	1.3	0	0	0	0	0	0	0	0	0
PCB-1260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,3-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,6-DINITROTOLUENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3,3'-DICHLOROBENZIDINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-CHLOROPHENYL PHENYL ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(G,H,I)PERYLENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(K)FLUORANTHENE	0	2.8	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZYL BUTYL PHTHALATE	3.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIS(2-CHLOROETHOXY)METHANE	0	0	2.6	0	0	0.6	0	0	0	0	0	0	0	2.5	0
BIS(2-CHLOROISOPROPYL)ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0
BIS(2-ETHYLHEXYL)PHTHALATE	1.5	2.3	0	0.5	0.4	1.4	3.2	0	1.9	4.5	0	20.5	0	1.8	0
CHRYSENE	0	0	0	0	0	0	0	0	0	0	0	0	0	2.0	0
D-BHC	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	0
DI-N-OCTYLPHTHALATE	0	0	0	0	0	1.1	0	0	0	0	0	0	0	0.6	0
DIELDRIN	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	0
DIMETHYL PHTHALATE	0	0	0	0.1	0	0	0	0	0	0	0	0	0	0	0
ENDRIN ALDEHYDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FLUORENE	0	0	0	0	0	5.8	0	0	0	0	0	0	0	1.1	0
HEPTACHLOR EPOXIDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROBUTADIENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROETHANE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDENO(1,2,3-C,D)PYRENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N-NITROSODI-N-PROPYLAMINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NITROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHENANTHRENE	0	0	0	0	20.0	1.2	0	0	0	0	0	0	0	2.6	0
PYRENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0
1,2-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,2,4-TRICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0
1,4-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-CHLORONAPHTHALENE	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0
2,4-DINITROTOLUENE	0	0	0	0	0	0	0	0	0	0	0	0	0	3.0	0
4-BROMOPHENYL PHENYL ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	1.3	0
4,4'-DDT	0	0	0	0	0	0	0	0	0	0	0	0	0	0.9	0

TABLE C-194

BLANK VALUES FOR VALIDATION ANALYSES - TAP WATER

COMPOUND	LABORATORY														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ACENAPHTHENE	0	0	0	0	0	1.0	0	0	0	0	0	0	0	0	0
ACENAPHTHYLENE	0	0	0	0	0	1.4	0	0	0	0	0	0	0	0	0
ALDRIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTHRACENE	0	0	0	0	0	1.2	0	0	0	0	0	0	0	13.5	0
B-BHC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(A)ANTHRACENE	0	0	0	0	0	0	0	0	0	0	0	0	0	1.2	0
BENZO(A)PYRENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(B)FLUORANTHENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIS(2-CHLOROETHYL)ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DI-N-BUTYLPHTHALATE	2.9	0	4.3	1.4	1.2	0	0	1.1	0.9	2.7	0	1.3	0	1.1	0
DIBENZO(A,H)ANTHRACENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIETHYL PHTHALATE	0	0	0	11.0	0	0	0	1.4	0	0	0	0	0	0	0
ENDOSULFAN SULFATE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FLUORANTHENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPTACHLOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ISOPHORONE	0	0	2.7	0	0	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE	0	0	0	0	0	1.5	0	0	0	0	0	0.6	0	0	0
PCB-1260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,3-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,6-DINITROTOLUENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3,3'-DICHLOROBENZIDINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-CHLOROPHENYL PHENYL ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(G,H,I)PERYLENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(K)FLUORANTHENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZYL BUTYL PHTHALATE	2.4	0	0	0	0	0	0	1.8	0	0	0	0	0	0.9	0
BIS(2-CHLOROETHOXY)METHANE	1.2	0	2.6	0	0	1.9	0	0	0	0	0	0	5.* 0	0	0
BIS(2-CHLOROISOPROPYL)ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIS(2-ETHYLHEXYL)PHTHALATE	0.7	0	0	0.8	3.5	57.9	1.2	0	1.6	3.2	0	5.6	3.1	1.7	0
CHRYSENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.8	0
D-BHC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DI-N-OCTYLPHTHALATE	0	0	0	0	0	3.1	0	0	0	0	0	0	0	0.2	0
DIELDRIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0.5	0
DIMETHYL PHTHALATE	0	0	0	0	1.6	0	0	0	0	0	0	0	0	0	0
ENDRIN ALDEHYDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FLUORENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPTACHLOR EPOXIDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROBUTADIENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROETHANE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDENO(1,2,3-C,D)PYRENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N-NITROSODI-N-PROPYLAMINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NITROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHENANTHRENE	0	0	0	0	0	1.2	0	0	0	0	0	0	0	1.4	0
PYRENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,2-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,2,4-TRICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,4-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-CHLORONAPHTHALENE	0	0	0	0	0	0	0	0	0	0	0	0	0.5 0 *	1.0	0
2,4-DINITROTOLUENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4	0
4-BROMOPHENYL PHENYL ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* VALUES FOR AMPULES 1, 4 AND 6.

TABLE C-195

BLANK VALUES FOR VALIDATION ANALYSES - SURFACE WATER

COMPOUND	LABORATORY														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ACENAPHTHENE	0	0	0	0	0	3.5	0	0	0	0	0	0	0	0	0
ACENAPHTHYLENE	0	0	2.7	0	0	4.3	0	0	0	0	0	0	0	0	0
ALDRIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTHRACENE	0	0	0	0	0	1.8	0	0	0	0	0	0	0	0	0
B-BHC	0	0	0	0	0	2.8	0	0	0	0	0	0	0	0	0
BENZO(A)ANTHRACENE	0	12.0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(A)PYRENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(B)FLUORANTHENE	0	9.6	0	0	0	0	0	0	0	0	0	0	0	0	0
BIS(2-CHLOROETHYL)ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DI-N-BUTYLPHTHALATE	0.4	0	3.3	1.1	0.9	0	0	1.1	0	0.9	0	1.0	0	0	1.3
DIBENZO(A,H)ANTHRACENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIETHYL PHTHALATE	0	0	0	0	0	0	0	1.2	0	0	0	0	0	0	0
ENDOSULFAN SULFATE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FLUORANTHENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPTACHLOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ISOPHORONE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCB-1260	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,3-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,6-DINITROTOLUENE	0	0	0	0	0	7.4	0	0.	0	0	0	0	0	0	0
3,3'-DICHLOROBENZIDINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-CHLOROPHENYL PHENYL ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDE	0	4.6	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(G,H,I)PERYLENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(K)FLUORANTHENE	0	9.6	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZYL BUTYL PHTHALATE	0.6	11.4	0	0.4	0	0	0	0	0	0	0	1.4	0	0.6	0.5
BIS(2-CHLOROETHOXY)METHANE	0	0	0	0	0	1.9	0	0	0	0	0	0	0	0	0
BIS(2-CHLOROISOPROPYL)ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIS(2-ETHYLHEXYL)PHTHALATE	0.2	10.5	4.1	2.3	1.1	3.5	1.7	0	0	4.6	19.9	0	0	19.6	52.5
CHRYSENE	0	10.4	0	0	0	0	0	0	0	0	0	0	0	0	0
D-BHC	0	-	-	0	0	-	0	0	0	0	0	0	0	0	0
DI-N-OCTYLPHTHALATE	0	8.9	0	3.4	0	5.2	0	0	0	0	0	0	0	0.3	0
DIELDRIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1	0
DIMETHYL PHTHALATE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENDRIN ALDEHYDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FLUORENE	0	0	0	0	0	0	0	0	0	0	0	0	0	1.6	0
HEPTACHLOR EPOXIDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROBUTADIENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROETHANE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDENO(1,2,3-C,D)PYRENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N-NITROSODI-N-PROPYLAMINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NITROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHENANTHRENE	0	0	0	0	0	1.8	0	0	0	0	0	0	0	0.3	0
PYRENE	0	0	0	0	0	0	0	0	0	0	0	0	0	1.5	0
1,2-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,2,4-TRICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,4-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	1.9	0
2-CHLORONAPHTHALENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,4-DINITROTOLUENE	0	0	0	0	0	0	0	0	0	0	0	0	0	1.0	0
4-BROMOPHENYL PHENYL ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDT	0	0	0	0	0	0	0	0	0	0	0	0	0	2.3	0
														0	0

TABLE C-196

BLANK VALUES FOR VALIDATION ANALYSES - INDUSTRIAL EFFLUENT

COMPOUND	LABORATORY														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
ACENAPHTHENE	0	0	0	0	27.3	1.4	0	0	0	0	0	0	13.1	0	0
ACENAPHTHYLENE	0	0	0	0	63.4	1.7	0	0	0	0	0	0	0	0	0
ALDRIN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ANTHRACENE	0	0	0	0	0	2.4	0	0	0	0	0	0	70.1	8.7	0
B-BHC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(A)ANTHRACENE	0	0	0	0	0	0	3.7	0	0	0	0	0	0	0	0
BENZO(A)PYRENE	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0
BENZO(B)FLUORANTHENE	0	0	0	0	0	0	0	0	0	0	0	0.5	0	0	0
BIS(2-CHLOROETHYL)ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DI-N-BUTYLPHTHALATE	1.9	0	0	9.1	56.2	0	4.3	1.8	0.4	1.0	0	1.0	0	1.8	0
DIBENZO(A,H)ANTHRACENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DIETHYL PHTHALATE	0	0	0	7.3	0	0	1.0	2.3	0	0	0	0.4	0	0	0
ENDOSULFAN SULFATE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FLUORANTHENE	1.0	0	0	0	4590	0.3	0	0	0	0	0	0	0	0	0
HEPTACHLOR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ISOPHORONE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NAPHTHALENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PCB-1260	0	0	0	0.5	63.4	2.3	0	0	0	0	0	0	0	0	0
1,3-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,6-DINITROTOLUENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3,3'-DICHLOROBENZIDINE	0	0	0	0	1160	0	0	0	0	0	0	0	0	0	0
4-CHLOROPHENYL PHENYL ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(G,H,I)PERYLENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BENZO(K)FLUORANTHENE	0	0	0	0	0	0	0	0	0	0	0	0.4	0	0	0
BENZYL BUTYL PHTHALATE	3.8	0	0	0	0	0	1.7	0	0	0	0	0	0	0	0
BIS(2-CHLOROETHOXY)METHANE	0	0	0	0	0	0	0	0	0	0	0	0	208	0.8	0
BIS(2-CHLOROISOPROPYL)ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BIS(2-ETHYLHEXYL)PHTHALATE	2.3	0	0	0.7	0	0	7.2	0	0.4	6.5	0	1.6	98.5	2.8	8.3
CHRYSENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
D-BHC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DI-N-OCTYLPHTHALATE	0	0	0	0	0	0	1.6	0	0	0	0	0	0	0	0
DIELDRIN	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0.3	0
DIMETHYL PHTHALATE	0	0	0	0.2	0	0	0	0	0	0	0	0	0	2.4	0
ENDRIN ALDEHYDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FLUORENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEPTACHLOR EPOXIDE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROBUTADIENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HEXACHLOROETHANE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INDENO(1,2,3-C,D)PYRENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N-NITROSODI-N-PROPYLAMINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NITROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHENANTHRENE	0	0	0	0	19.4	2.4	0	0	0	0	0	0	1.7	0	0
PYRENE	1.4	0	0	0	0	0	5.9	0	0	0	0	0	70.1	0.9	0
1,2-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0.5	13.0	0	0
1,2,4-TRICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1,4-DICHLOROBENZENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4.0
2-CHLORONAPHTHALENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,4-DINITROTOLUENE	0	0	0	0	0	0	0	0	0	0	0	0	0	0.7	0
4-BROMOPHENYL PHENYL ETHER	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4,4'-DDT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE C-197

BLANK VALUES FOR VALIDATION ANALYSES - DISTILLED WATER

COMPOUND	LABORATORY														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PENTACHLOROPHENOL	0	6.5	0	0	0	70.5	0	0	0	0	0	0	0	0	0
PHENOL	0	0	0	1.8	0	1.4	0	0	0	0	0	0	0	0.4	2.0
					0.7*										
2-CHLOROPHENOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-METHYL-4,6-DINITROPHENOL	0	1.1	0	0	0	0	0	0	0	0	0	0	0	0	0
2-NITROPHENOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2,4-DICHLOROPHENOL	0	0	0	0	0	0	0	0	0	0	0	0	3.4	0	0
2,4-DIMETHYLPHENOL	0	2.8	0	0	0	1.7	0	0	0	0	0	0	0	0	0
					3.7*										
2,4-DINITROPHENOL	0	0	0	0	11.1	0	0	0	0	0	0	0	0	0	0
					2.6*										
2,4,6-TRICHLOROPHENOL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4-CHLORO-3-METHYLPHENOL	0	0.3	0	0	0	0	0	0	0	0	0	0	1.3	0	0
4-NITROPHENOL	0	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0

* VALUES FOR AMPULES 2 THROUGH 5.

TABLE C-198

BLANK VALUES FOR VALIDATION ANALYSES - TAP WATER

COMPOUND	LABORATORY														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PENTACHLOROPHENOL	2.2	2.4	0	0	0	0	0	0	0	0	0	0	0	0	0.2
PHENOL	0	0.8	0	1.7	0.7	0	0	0	0	0	0	0	0	0.3	0
2-CHLOROPHENOL	0	0	0	0	2.1	0	0	0	0	0	0	0	0	0	0
2-METHYL-4,6-DINITROPHENOL	0	6.9	0	0	0	0	0	0	0	0	0	0	0	0	0
2-NITROPHENOL	0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0
2,4-DICHLOROPHENOL	0	0.2	0	0	0	0	0	0	0	0	0	0	0	0	0
2,4-DIMETHYLPHENOL	0	3.7	0	0	1.3	2.3	0	0	0	0	0	0	0	0	0
2,4-DINITROPHENOL	0	8.3	0	0	0	0	0	0	0	0	0	0	0	2.0	0
2,4,6-TRICHLOROPHENOL	0	0.2	3.2	0	0	0	0	0	0	0	0	0	0	0	0
4-CHLORO-3-METHYLPHENOL	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0
4-NITROPHENOL	0	6.5	0	0	0	0	0	0	0	0	0	0	0.9	0	0
													0	0	0

TABLE C-199

BLANK VALUES FOR VALIDATION ANALYSES - SURFACE WATER

COMPOUND	LABORATORY														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PENTACHLOROPHENOL	1.2	4.1	0	0	0	0	0	0	0	0	0	0	0	0	0
PHENOL	0	0	0	0.8	0	1.7	0	0	0	0	0	0	0	0.3	3.6
2-CHLOROPHENOL	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0
2-METHYL-4,6-DINITROPHENOL	0	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0
2-NITROPHENOL	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0
2,4-DICHLOROPHENOL	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
2,4-DIMETHYLPHENOL	0	2.9	0	0	2.9	1.3	0	0	0	0	0	0	0	1.9	0
2,4-DINITROPHENOL	0	0.9	0	0	4.4	0	0	0	0	0	0	0	0	0	0
2,4,6-TRICHLOROPHENOL	0	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0
4-CHLORO-3-METHYLPHENOL	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0
4-NITROPHENOL	0	1.6	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE C-200

BLANK VALUES FOR VALIDATION ANALYSES - INDUSTRIAL EFFLUENT

COMPOUND	LABORATORY														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PENTACHLOROPHENOL	12.4	14.4	0	0	0	0	0	0	0	0	0	0	0	0	0
PHENOL	0	1.1	30.2	1.4	1860	1.5	0	0	0	0	0	0	0	1.0	9.9
2-CHLOROPHENOL	0	2.1	0	0	21.9	0	0	0	0	0	0	0	0	0	0
2-METHYL-4,6-DINITROPHENOL	0	10.0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-NITROPHENOL	0	2.0	3.2	0	0.7	0	0	0	0	0	0	0	0	0	0
2,4-DICHLOROPHENOL	0	5.3	0	0	0	0	0	0	0	0	0	0	0	0	0
2,4-DIMETHYLPHENOL	7.5	9.3	7.5	0	2.1	1.9	0	0	0	0	0	0	0	2.9	0
2,4-DINITROPHENOL	0	22.7	0	0	0	0	0	0	0	0	0	0	0	0	0
2,4,6-TRICHLOROPHENOL	0.5	4.2	8.3	0	0	0	0	0	0	0	0	0	0	0	0
4-CHLORO-3-METHYLPHENOL	0	6.9	6.7	0	0	0	0	0	0	0	0	0	0	0	0
4-NITROPHENOL	0	10.2	0	0	0	0	0	0	0	0	0	0	0	0	0

TABLE C-201
PERFORMANCE SAMPLE FOR METHOD 625

Compound	Concentration - µg/L
2,4,6-Trichlorophenol	7.0
1,3-Dichlorobenzene	15.2
3,3'-Dichlorobenzidine	23.0
2,4-Dinitrotoluene	12.3
Hexachlorobutadiene	37.4
Isophorone	50.2
Naphthalene	85.2
2-Nitrophenol	21.6
Pentachlorophenol	10.1
Di-n-octylphthalate	20.4
Fluorene	45.1
Pyrene	22.8
Dieldrin	37.2
4,4'-DDE	11.2
4-Bromophenyl phenyl ether	15.2
Biphenyl*	20.0
Benzo(g,h,i)perylene**	23.0
N-nitrosodi-n-propyl amine	27.1

* Nonpriority pollutant interference.

** Did not go completely into solution.

APPENDIX D

EPA METHOD 625 - B/N AND ACIDS

United States
Environmental Protection
Agency

Environmental Monitoring and
Support Laboratory
Cincinnati OH 45268

Research and Development

EPA

Test Method

Base/Neutrals and Acids — Method 625

1. Scope and Application

1.1 This method covers the determination of a number of organic compounds that are partitioned into an organic solvent and are amenable to gas chromatography. The parameters listed in Tables 1 and 2 may be qualitatively and quantitatively determined using this method.

1.2 The method may be extended to include the parameters listed in Table 3. Benzidine can be subject to oxidative losses during solvent concentration. α-BHC, γ-BHC, endosulfan I and II, and endrin are subject to decomposition under the alkaline conditions of the extraction step. Hexachlorocyclopentadiene is subject to thermal decomposition in the inlet of the gas chromatograph, chemical reaction in acetone solution and photochemical decomposition. N-nitrosodimethylamine is difficult to separate from the solvent under the chromatographic conditions described. N-nitrosodiphenylamine decomposes in the gas chromatographic inlet and cannot be separated from diphenylamine. The preferred method for each of these parameters is listed in Table 3.

1.3 This is a gas chromatography/mass spectrometry (GC/MS) method applicable to the determination of the compounds listed in Tables 1, 2, and 3 in municipal and industrial discharges as provided under 40 CFR 136.1. Until the U.S. Environmental Protection Agency establishes performance criteria based upon the results of interlaboratory testing, any alternative GC/MS method which meets the performance criteria described in Section 8.2 will be permitted. Performance must be verified for such modification by analyzing wastewater as described in Section 8.2.2. In addition, the laboratory must successfully participate in the applicable performance evaluation studies.

1.4 The method detection limit (MDL, defined in Section 16)[1] for each parameter is listed in Tables 4 and 5. The MDL for a specific wastewater differ from those listed, depending upon the nature of interferences in the sample matrix.

1.5 This method is restricted to use by or under the supervision of analysts experienced in the operation of gas chromatograph/mass spectrometers and skilled in the interpretation of mass spectra. Each analyst must demonstrate the ability to generate acceptable results with this method using the procedure described in Section 8.2.

2. Summary of Method

2.1 A measured volume of sample, approximately one-liter, is serially extracted with methylene chloride at a pH greater than 11 and again at pH less than 2 using a separatory funnel or a continuous extractor. The methylene chloride extract is dried and concentrated to a volume of 1 mL. Chromatographic conditions are described which permit the separation and measurement of the parameters in the extract. Qualitative identification is performed using the retention time and the relative abundance of three characteristic ions. Quantitative analysis is performed using either

external or internal standard techniques with a single characteristic ion.

3. Interferences

3.1 Method interferences may be caused by contaminants in solvents, reagents, glassware, and other sample processing hardware that lead to discrete artifacts and/or elevated baselines in the total ion current profiles. All of these materials must be routinely demonstrated to be free from interferences under the conditions of the analysis by running laboratory reagent blanks as described in Section 8.5.

3.1.1 Glassware must be scrupulously cleaned[3]. Clean all glassware as soon as possible after use by rinsing with the last solvent used in it. This should be followed by detergent washing with hot water, and rinses with tap water and reagent water. It should then be drained dry, and heated in a muffle furnace at 400 °C for 15 to 30 minutes. Some thermally stable materials, such as PCBs, may not be eliminated by this treatment. Solvent rinses with acetone and pesticide quality hexane may be substituted for the muffle furnace heating. Volumetric ware should not be heated in a muffle furnace. After drying and cooling, glassware should be sealed and stored in a clean environment to prevent any accumulation of dust or other contaminants. Store it inverted or capped with aluminum foil.

3.1.2 The use of high purity reagents and solvents helps to minimize interference problems. Purification of solvents by distillation in all-glass systems may be required.

3.2 Matrix interferences may be caused by contaminants that are coextracted from the sample. The extent of matrix interferences will vary considerably from source to source, depending upon the nature and diversity of the industrial complex or municipality being sampled.

3.3 The base-neutral extraction may cause significantly reduced recovery of phenol, 2-methylphenol, and 2,4-dimethylphenol. The analyst must recognize that results obtained under these conditions are minimum concentrations.

3.4 The packed gas chromatographic columns recommended for the basic fraction may not exhibit sufficient resolution for certain isomeric pairs. These include anthracene and phenanthrene; chrysene and benzo(a)anthracene; and benzo(b)fluoranthene and benzo(k)fluoranthene. The gas chromatograph retention time and mass spectra are not sufficiently different to make an unambiguous distinction between these compounds. Alternative techniques should be used to identify and quantify these specific compounds. See method 610.

3.5 In samples that contain an inordinate number of interferences, the use of chemical ionization (CI) mass spectrometry may make identification easier. Tables 6 and 7 give characteristic CI ions for most of the compounds covered by this method. The use of CI mass spectrometry to support electron ionization (EI) mass spectrometry is encouraged but not required.

4. Safety

4.1 The toxicity or carcinogenicity of each reagent used in this method has not been precisely defined; however, each chemical compound should be treated as a potential health hazard. From this viewpoint, exposure to these chemicals must be reduced to the lowest possible level by whatever means available. The laboratory is responsible for maintaining a current awareness file of OSHA regulations regarding the safe handling of the chemicals specified in this method. A reference file of material data handling sheets should also be made available to all personnel involved in the chemical analysis. Additional references to laboratory safety are available and have been identified for the information of the analyst[4-6].

4.2 The following parameters covered by this method have been tentatively classified as known or suspected, human or mammalian carcinogens; benzo(a)anthracene, benzidine, 3,3'-dichlorobenzidine, benzo(a)pyrene, α-BHC, β-BHC, δ-BHC, γ-BHC, dibenzo(a,h) anthracene, N-nitrosodimethylamine, 4,4'-DDT and polychlorinated biphenyls.

5. Apparatus and Materials

5.1 Sampling equipment, for discrete or composite sampling.

5.1.1 Grab sample bottle—Amber glass, one-liter or one-quart volume, fitted with screw caps lined with Teflon. Foil may be substituted for Teflon if the sample is not corrosive. If amber bottles are not available, protect samples from light. The container must be washed, rinsed with acetone or methylene chloride, and dried before use to minimize contamination.

5.1.2 Automatic sampler (optional)—Must incorporate glass sample containers for the collection of a minimum of 250 mL. Sample containers must be kept refrigerated at 4 °C and protected from light during compositing. If the sampler uses a peristaltic pump, a minimum length of compressible silicone rubber tubing may be used. Before use, however, the compressible tubing should be thoroughly rinsed with methanol, followed by repeated rinsings with distilled water to minimize the potential for contamination of the sample. An integrating flow meter is required to collect flow proportional composites.

5.2 Glassware (All specifications are suggested. Catalog numbers are included for illustration only).

5.2.1 Separatory funnel—2000-mL, with Teflon stopcock.

5.2.2 Drying column—19 mm ID chromatographic column with coarse frit.

5.2.3 Concentrator tube, Kuderna-Danish—10-mL, graduated (Kontes K-570050-1025 or equivalent). Calibration must be checked at the volumes employed in the test. Ground glass stopper is used to prevent evaporation of extracts.

5.2.4 Evaporative flask, Kuderna-Danish—500-mL (Kontes K-570001-0500 or equivalent). Attach to concentrator tube with springs.

5.2.5 Snyder column, Kuderna-Danish—Three-ball macro (Kontes K-503000-0121 or equivalent).

5.2.6 Snyder column, Kuderna-Danish—Two-ball micro (Kontes K-569001-0219 or equivalent).

5.2.7 Vials—Amber glass, 10- to 15-mL capacity, with Teflon-lined screw cap.

5.2.8 Continuous liquid-liquid extractors—Equipped with Teflon or glass connecting joints and stopcocks requiring no lubrication. (Hershberg-Wolf Extractor-Ace Glass Company, Vineland, N.J. P/N 6841-10 or equivalent.)

5.3 Boiling chips—approximately 10/40 mesh. Heat to 400 °C for 30 minutes or Soxhlet extract with methylene chloride.

5.4 Water bath—Heated, with concentric ring cover, capable of temperature control (± 2 °C). The bath should be used in a hood.

5.5 Balance—Analytical, capable of accurately weighing 0.0001 g.

5.6 GC/MS system.

5.6.1 Gas chromatograph—An analytical system complete with a temperature programmable gas chromatograph and all required accessories including syringes, analytical columns, and gases. The injection port must be designed for on-column injection when using packed columns and for splitless injection when using capillary columns.

5.6.2 Column for Base Neutrals—1.8 m long × 2 mm ID glass, packed with Supelcoport (100/120 mesh) coated with 3% SP-2250 or equivalent. This column was used to develop the accuracy and precision statements in Table 6 and the MDL data in Table 4. Guidelines for the use of alternate column packings are provided in Section 13.1.

5.6.3 Column for Acids—1.8 m long × 2 mm ID glass, packed with Supelcoport (100/120 mesh) coated with 1% SP-1240 DA or equivalent. This column was used to develop the accuracy and precision statements in Table 7, and the MDL data in Table 5. Guidelines for the use of alternate column packings are given in Section 13.1.

5.6.4 Mass Spectrometer—Capable of scanning from 35 to 450 amu every seven seconds or less utilizing a 70 volt (nominal) electron energy in the electron impact ionization mode and producing a mass spectrum which meets all the criteria in Table 9 when 50 ng of decafluorotriphenyl phosphine (DFTPP; bis(perfluorophenyl) phenyl phosphine) is injected through the gas chromatographic inlet. Any gas chromatograph to mass spectrometer interface that gives acceptable calibration points at 50 ng per injection for each compound of interest in Tables 1 through 3 and achieves all acceptable performance criteria (Section 12) may be used. Gas chromatograph to mass spectrometer interfaces constructed of all glass or glass lined materials are recommended. Glass can be deactivated by silanizing with dichlorodimethylsilane.

5.6.5 A computer system must be interfaced to the mass spectrometer that allows the continuous acquisition and storage on machine readable media of all mass spectra obtained throughout the duration of the chromatographic program. The computer must have software that allows searching any GC/MS data file for ions of a specific mass and plotting such ion abundances versus time or scan number. This type of plot is defined as an Extracted Ion Current Profile (EICP). Software must also be available that allows integrating the abundance in any EICP between specified time or scan number limits.

6. Reagents

6.1 Reagent water—Reagent water is defined as a water in which an interferent is not observed at the method detection limit of each parameter of interest.

6.2 Sodium hydroxide solution (10 N)—Dissolve 40g NaOH in reagent water and dilute to 100 mL.

6.3 Sodium thiosulfate—(ACS) Granular.

6.4 Sulfuric acid solution (1 + 1)—Slowly add 50 mL of H_2SO_4 (sp. gr. 1.84) to 50 mL of reagent water.

6.5 Acetone, methanol, methylene chloride—Pesticide quality or equivalent.

6.6 Sodium sulfate—(ACS) Granular, anhydrous. Purify by heating at 400 °C for four hours in a shallow tray.

6.7 Stock standard solutions (1.00 µg/µL)—Stock standard solutions can be prepared from pure standard materials or purchased as certified solutions.

6.7.1 Prepare stock standard solutions by accurately weighing about 0.0100 g of pure material. Dissolve the material in pesticide quality acetone or other suitable solvent and dilute to volume in a 10-mL volumetric flask. Larger volumes may be used at the convenience of the analyst. If compound purity is assayed at 96% or greater, the weight may be used without correction to calculate the concentration of the stock standard. Commercially prepared stock standards may be used at any concentration if they are certified by the manufacturer or by an independent source.

6.7.2 Transfer the stock standard solutions into Teflon-sealed screw-cap bottles. Store in at 4 °C and protect from light. Stock standard solutions should be checked frequently for signs of degradation or evaporation, especially just prior to preparing calibration standards from them. Quality control check samples, that can be used to determine the accuracy of calibration standards will be available from the U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

6.7.3 Stock standard solutions must be replaced after six months or sooner if comparison with quality control check samples indicate a problem.

6.8 Surrogate standard spiking solutions—select a minimum of three surrogate compounds from Table 8. Prepare a surrogate standard spiking solution at a concentration of 100 µg/1.00 ML in acetone. Addition of 1.00 mL of this solution to 1000-mL of sample is equivalent to a concentration of 100 µg/L of each surrogate standard. Store the spiking solutions at 4 °C in Teflon-sealed containers. The solutions should be checked frequently for stability. These solutions must be replaced after six months, or sooner if comparison with quality control check samples indicate a problem. Surrogate standard spiking solutions, appropriate for use with this method will be available from the U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

6.9 DFTPP standard—Prepare a 25 ng/µL solution of DFTPP in acetone.

7. Calibration

7.1 Establish gas chromatographic operating parameters equivalent to those indicated in Tables 4 or 5. The GC/MS system can be calibrated using the external standard technique (Section 7.2) or the internal standard technique (Section 7.3).

7.2 External standard calibration procedure:

7.2.1 Prepare calibration standards at a minimum of three concentration levels for each parameter of interest by adding volumes of one or more stock standards to a volumetric flask and diluting to volume with acetone. One of the external standards should be at a concentration near, but above, the MDL and the other concentrations should correspond to the expected range of concentrations found in real samples or should define the working range of the GC/MS system.

7.2.2 Analyze 2 to 5 µL of each calibration standard and tabulate the area responses of the primary characteristic ion of each standard (Tables 4 and 5) against the mass injected. The results may be used to prepare a calibration curve for each compound. Alternatively, if the ratio of response to amount injected (calibration factor) is a constant over

the working range (<10% relative standard deviation, RSD), linearity through the origin may be assumed and the average ratio or calibration factor may be used in place of a calibration curve.

7.2.3 The working calibration curve or calibration factor must be verified on each working day by the measurement of one or more calibration standards. If the response for any parameter varies from the predicted response by more than ±10%, the test must be repeated using a fresh calibration standard. Alternatively, a new calibration curve or calibration factor must be prepared for that compound.

7.3 Internal standard calibration procedure. To use this approach, the analyst must select one or more internal standards that are similar in analytical behavior to the compounds of interest. The analyst must further demonstrate that the measurement of the internal standard is not affected by method or matrix interferences. Table 8 lists some recommended internal standards. Phenanthrene-d_{10} has been used for this purpose. Use the base peak ion as the primary ion for quantification of the standards. If interferences are noted, use the next two most intense ions as the secondary ions.

7.3.1 Prepare calibration standards at a minimum of three concentration levels for each parameter of interest by adding appropriate volumes of one or more stock standards to a volumetric flask. To each calibration standard or standard mixture, add a known constant amount of one or more internal standards, and dilute to volume with acetone. One of the calibration standards should be at a concentration near, but above, the MDL and the other concentrations should correspond to the expected range of concentrations found in real samples or should define the working range of the GC/MS system.

7.3.2 Analyze 2 to 5 μL of each calibration standard and tabulate the area of the primary characteristic ion (Tables 4 and 5) against concentration for each compound and internal standard, and calculate response factors (RF) for each compound using equation 1.

$$\text{Eq. 1 } RF = (A_s C_{is})/(A_{is} C_s)$$

where:

A_s = Area of the characteristic ion for the parameter to be measured.

A_{is} = Area of the characteristic ion for the internal standard.

C_{is} = Concentration of the internal standard, (μg/L).

C_s = Concentration of the parameter to be measured, (μg/L).

If the RF value over the working range is a constant (<10% RSD), the RF can be assumed to be invariant and the average RF can be used for calculations. Alternatively, the results can be used to plot a calibration curve of response ratios, A_s/A_{is}, vs. RF.

7.3.3 The working calibration curve or RF must be verified on each working day by the measurement of one or more calibration standards. If the response for any parameter varies from the predicted response by more than ±10%, the test must be repeated using a fresh calibration standard. Alternatively, a new calibration curve must be prepared.

8. Quality Control

8.1 Each laboratory that uses this method is required to operate a formal quality control program. The minimum requirements of this program consist of an initial demonstration of laboratory capability and the analysis of spiked samples as a continuing check on performance. The laboratory is required to maintain performance records to define the quality of data that is generated. Ongoing performance checks must be compared with established performance criteria to determine if the results of analyses are within accuracy and precision limits expected of the method.

8.1.1 Before performing any analyses, the analyst must demonstrate the ability to generate acceptable accuracy and precision with this method. This ability is established as described in Section 8.2.

8.1.2 In recognition of the rapid advances that are occurring in chromatography, the analyst is permitted certain options to improve the separations or lower the cost of measurements. Each time such modifications are made to the method, the analyst is required to repeat the procedure in Section 8.2.

8.1.3 The laboratory must spike all samples with surrogate standards to monitor continuing laboratory performance. This procedure is described in Section 8.4.

8.2 To establish the ability to generate acceptable accuracy and precision, the analyst must perform the following operations.

8.2.1 Select a representative spike concentration for each parameter to be measured. Using stock standards, prepare a quality control check sample concentrate in acetone 1000 times more concentrated than the selected concentrations. Quality control check sample concentrates, appropriate for use with this method, will be available from the U.S Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268.

8.2.2 Using a pipet, add 1.00 mL of the check sample concentrate and 1.0 mL of the surrogate standard dosing solution (Section 6.8) to each of a minimum of four 1000-mL aliquots of reagent water. A representative wastewater may be used in place of the reagent water, but one or more additional aliquots must be analyzed to determine background levels, and the spike level must exceed twice the background level for the test to be valid. Analyze the aliquots according to the method beginning in Section 10.

8.2.3 Calculate the average percent recovery, (R), and the standard deviation of the percent recovery (s), for all parameters and surrogate standards. Wastewater background corrections must be made before R and s calculations are performed.

8.2.4 Using Table 6 or 7, note the average recovery (X) and standard deviation (p) expected for each method parameter. Compare these to the calculated values for R and s. If $s > p$ or $|X - R| > p$, review potential problem areas and repeat the test.

8.2.5 The U.S. Environmental Protection Agency plans to establish performance criteria for R and s based upon the result of interlaboratory testing. When they become available, these criteria must be met before any samples may be analyzed.

8.3 The analyst must calculate method performance criteria for each of the surrogate standards.

8.3.1 Calculate upper and lower control limits for method performance for each surrogate standard, using the values for R and s calculated in Section 8.2.3:

Upper Control Limit (UCL) = R + 3s
Lower Control Limit (LCL) = R − 3s

The UCL and LCL can be used to construct control charts[7] that are useful in observing trends in performance. The control limits above must be replaced by method performance criteria as they become avail-

able from the U.S. Environmental Protection Agency.

8.3.2 For each surrogate standard, the laboratory must develop and maintain separate accuracy statements of laboratory performance for wastewater samples. An accuracy statement for the method is defined as R ± s. The accuracy statement should be developed by the analysis of four aliquots of wastewater as described in Section 8.2.2, followed by the calculation of R and s. Alternately, the analyst may use four wastewater data points gathered through the requirement for continuing quality control in Section 8.4. The accuracy statements should be updated regularly.[7]

8.4 The laboratory is required to spike all samples with the surrogate standard spiking solution to monitor spike recoveries. If the recovery for any surrogate standard does not fall within the control limits for method performance, the results reported for that sample must be qualified as described in Section 15.3. The laboratory should monitor the frequency of data so qualified to ensure that it remains at or below 5%.

8.5 Before processing any samples, the analyst should demonstrate through the analysis of a one-liter aliquot of reagent water, that all glassware and reagent interferences are under control. Each time a set of samples is extracted or there is a change in reagents, a laboratory reagent blank should be processed as a safeguard against laboratory contamination.

8.6 It is recommended that the laboratory adopt additional quality assurance practices for use with this method. The specific practices that are most productive depend upon the needs of the laboratory and the nature of the samples. Field duplicates may be analyzed to monitor the precision of the sampling technique. Whenever possible, the laboratory should perform analysis of standard reference materials and participate in relevant performance evaluation studies.

9. Sample Collection, Preservation, and Handling

9.1 Grab samples must be collected in glass containers. Conventional sampling practices[8] should be followed, except that the bottle must not be prewashed with sample before collection. Composite samples should be collected in refrigerated glass containers in accordance with the requirements of the program. Automatic sampling equipment must be as free as possible of Tygon and other potential sources of contamination.

9.2 The samples must be iced or refrigerated at 4 °C from the time of collection until extraction. Fill the sample bottles and, if residual chlorine is present, add 80 mg of sodium thiosulfate per each liter of water. U.S. Environmental Protection Agency methods 330.4 and 330.5 may be used to measure the residual chlorine[9]. Field test kits are available for this purpose.

9.3 All samples must be extracted within 7 days and completely analyzed within 40 days of extraction.

10. Separatory Funnel Extraction

10.1 Samples are usually extracted using separatory funnel techniques. If emulsions will prevent achieving acceptable solvent recovery with separatory funnel extractions, continuous extraction (Section 11) may be used. The separatory funnel extraction scheme described below assumes a sample volume of one-liter. When sample volumes of two liters are to be extracted, use 250-, 100-, and 100-mL volumes of methylene chloride for the serial extraction of the base/neutrals and 200-, 100-, and 100-mL volumes of methylene chloride for the acids.

10.2 Mark the water meniscus on the side of the sample bottle for later determination of sample volume. Pour the entire sample into a two-liter separatory funnel. Pipet 1.00 mL surrogate standard spiking solution into the separatory funnel and mix well. Check the pH of the sample with wide-range pH paper and adjust to pH > 11 with 10 N sodium hydroxide.

10.3 Add 60 mL methylene chloride to the sample bottle, seal, and shake for 30 seconds to rinse the inner surface. Transfer the solvent to the separatory funnel and extract the sample by shaking the funnel for two minutes with periodic venting to release excess pressure. Allow the organic layer to separate from the water phase for a minimum of 10 minutes. If the emulsion interface between layers is more than one-third the volume of the solvent layer, the analyst must employ mechanical techniques to complete the phase separation. The optimum technique depends upon the sample, but may include stirring, filtration of the emulsion through glass wool, centrifugation, or other physical methods. Collect the methylene chloride extract in a 250-ml Erlenmeyer flask. If the emulsion cannot be broken (recovery of less than 80% of the methylene chloride, corrected for the water solubility of methylene chloride), transfer the sample, solvent, and emulsion into the extraction chamber of a continuous extractor and proceed as described in Section 11.3.

10.4 Add a second 60-mL volume of methylene chloride to the sample bottle and repeat the extraction procedure a second time, combining the extracts in the Erlenmeyer flask. Perform a third extraction in the same manner. Label the combined extract as base/neutral fraction.

10.5 Adjust the pH of the aqueous phase to less than 2 using sulfuric acid (1 + 1). Serially extract three times with 60-mL aliquots of methylene chloride. Collect and combine the extracts in a 250-mL Erlenmeyer flask and label the combined extract as the acid fraction.

10.6 For each fraction, assemble a Kuderna-Danish (K-D) concentrator by attaching a 10-mL concentrator tube to a 500-mL evaporative flask. Other concentration devices or techniques may be used in place of the K-D if the requirements of Section 8.2 are met.

10.7 For each fraction, pour the combined extract through a drying column containing about 10 cm of anhydrous sodium sulfate, and collect the extract in the K-D concentrator. Rinse the Erlenmeyer flask and column with 20 to 30 mL of methylene chloride to complete the quantitative transfer.

10.8 To the evaporative flask for each fraction, add one or two clean boiling chips and attach a three-ball Snyder column. Prewet the Snyder column by adding about 1 mL methylene chloride to the top of the column. Place the K-D apparatus on a hot water bath (60 ° to 65 °C) so that the concentrator tube is partially immersed in the hot water, and the entire lower rounded surface of the flask is bathed with hot vapor. Adjust the vertical position of the apparatus and the water temperature as required to complete the concentration in 15 to 20 minutes. At the proper rate of distillation the balls of the column will actively chatter but the chambers will not flood with condensed solvent. When the apparent volume of liquid reaches 1 mL, remove the K-D apparatus from the water bath and

allow it to drain and cool for at least 10 minutes. Remove the Snyder column and rinse the flask and its lower joint into the concentrator tube with 1 to 2 mL of methylene chloride. A 5-mL syringe is recommended for this operation.

10.9 Add another one or two clean boiling chips to the concentrator tube and attach a two-ball micro Snyder column. Prewet the Snyder column by adding about 0.5 mL of methylene chloride to the top of the column. Place the K-D apparatus on a hot water bath (60 ° to 65 °C) so that the concentrator tube is partially immersed in the hot water. Adjust the vertical position of the apparatus and the water temperature as required to complete the concentration in 5 to 10 minutes. At the proper rate of distillation the balls of the column will actively chatter but the chambers will not flood with condensed solvent. When the apparent volume of liquid reaches about 0.5 mL, remove the K-D apparatus from the water-bath and allow it to drain for at least 10 minutes while cooling. Remove the Snyder column and rinse its the flask and its lower joint into the concentrator tube with 0.2 mL of acetone or methylene chloride. Adjust the final volume to 1.0 mL with the solvent. Stopper the concentrator tube and store refrigerated if GC/MS analysis will not be performed immediately. If the extracts will be stored longer than two days, they should be transferred to Teflon-sealed screw-cap bottles and labeled base/neutral or acid fraction as appropriate.

10.10 Determine the original sample volume by refilling the sample bottle to the mark and transferring the water to a 1000-mL graduated cylinder. Record the sample volume to the nearest 5 mL.

11. Continuous Extraction

11.1 When experience with a sample from a given source indicates that a serious emulsion problem will result or an emulsion is encountered in Section 10.3, using a separatory funnel, a continuous extractor should be used.

11.2 Mark the water meniscus on the side of the sample bottle for later measurement of the sample volume. Check the pH of the sample with wide-range pH paper and adjust to pH 11 with 10 N sodium hydroxide. Transfer the sample to the continuous extractor and using a pipet, add 1.00 mL of surrogate standard spiking solution and mix well. Add 60 mL of methylene chloride to the sample bottle, seal and shake for 30 seconds to rinse the inner surface. Transfer the solvent to the extractor.

11.3 Repeat the sample bottle rinse with an additional 50- to 100-mL portion of methylene chloride and add the rinse to the extractor.

11.4 Add 200 to 500 mL of methylene chloride to the distilling flask, add sufficient reagent water to ensure proper operation, and extract for 24 hours. Allow to cool, then detach the boiling flask, and dry, concentrate and seal the extract as in Section 10.6 through 10.9. Hold the aqueous phase for acid extraction (See Section 11.5).

11.5 Charge a clean distilling flask with 500 mL of methylene chloride and attach it to the continuous extractor. Carefully, adjust the pH of the aqueous phase to less than 2 using sulfuric acid (1 + 1). Extract for 24 hours. Dry, concentrate and label and seal the extract as described in Sections 10.6 through 10.9.

12. Daily GC/MS Performance Tests

12.1 At the beginning of each day that analyses are to be performed, the GC/MS system must be checked to see that acceptable performance criteria are achieved for DFTPP. Each day that benzidine is to be determined, the tailing factor criterion described in Section 12.4 must be achieved. Each day the acids are to be determined, the tailing factor criterion in Section 12.5 must be achieved.

12.2 These DFTPP performance test require the following instrumental parameters.

Electron Energy	70 volts (nominal)
Mass Range	35 to 450 amu
Scan Time	to give at least 5 scans per peak but not to exceed 7 seconds per scan.

12.3 DFTPP performance test[10]— At the beginning of each day, inject 2μL (50 ng) of DFTPP standard solution. Obtain a background corrected mass spectra of DFTPP and check that all the key ion criteria in Table 9 are achieved. If all the criteria are not achieved, the analyst must retune the mass spectrometer and repeat the test until all criteria are achieved. The performance criteria must be achieved before any samples, blanks, or standards are analyzed. The tailing factor tests in Section 12.4 and 12.5 may be performed simultaneously with the test.

12.4 Column performance test for base/neutrals—At the beginning of each day that the base-neutral fraction is to be analyzed for benzidine, the benzidine tailing factor must be calculated. Inject 100 ng of benzidine either separately or as a part of a standard mixture that may contain DFTPP and calculate the tailing factor. The benzidine tailing factor must be less than 3.0. Calculation of the tailing factor is illustrated in Figure 13.[11] Replace the column packing if the tailing factor criterion cannot be achieved.

12.5 Column performance for acids—At the beginning of each day that the acids are to be determined, inject 50 ng of pentachlorophenol either separately or as a part of a standard mix that may contain DFTPP. The tailing factor for pentachlorophenol must be less than five. Calculation of the tailing factor is illustrated in Figure 13[11]. Replace the column packing if the tailing factor criterion cannot be achieved.

13. Gas Chromatography/ Mass Spectrometry

13.1 Table 4 summarizes the recommended gas chromatographic operating conditions for the base/neutral fraction. Table 5 summarizes the recommended gas chromatographic operating conditions for determination of the acid fraction. These tables include retention times and MDL that were achieved under these conditions. Examples of the parameter separations achieved by these columns are shown in Figures 1 through 12. Other packed columns or chromatographic conditions may be used if the requirements of Section 8.2 and Section 12 are met. Capillary (open-tubular) columns may also be used if the relative standard deviations of responses for replicate injections are demonstrated to be less than 6% and the requirements of Section 8.2 and Section 12 are met.

13.2 After the GC/MS performance requirements of Section 12, calibrate the system daily as described in Section 7.

13.3 If the internal standard approach is being used, the internal standard must be added to sample extract and mixed thoroughly, immediately, before injection into the instrument. This minimizes losses due to adsorption, chemical reaction or evaporation.

13.4 Inject 2 to 5 μL of the sample extract using the solvent-flush

technique[12]. Smaller (1.0 µL) volumes may be injected if automatic devices are employed. Record the volume injected to the nearest 0.05 µL.

13.5 If the response for any ion exceeds the working range of the GC/MS system, dilute the extract and reanalyze.

13.6 Perform all qualitative and quantitative measurements as described in Sections 14 and 15. When the extracts are not being used for analyses, store them at 4 °C protected from light in screw-cap vials equipped with unpierced Teflon-lined septa.

14. Qualitative Identification

14.1 Obtain an EICP for the primary ion and the two other ions listed in Tables 4 and 5. See Section 7.3 for ions to be used with internal and surrogate standards. The following criteria must be met to make a qualitative identification.

14.1.1 The characteristic ions for each compound of interest must maximize in the same or within one scan of each other.

14.1.2 The retention time must fall within ±30 seconds of the retention time of the authentic compound.

14.1.3 The relative peak heights of the three characteristic ions in the EICP's must fall within ±20% of the relative intensities of these ions in a reference mass spectrum. The reference mass spectrum can be obtained by a standard analyzed in the GC/MS system or from a reference library.

14.2 Structural isomers that have very similar mass spectra and less than 30 seconds difference in retention time, can be explicitly identified only if the resolution between authentic isomers in a standard mix is acceptable. Acceptable resolution is achieved if the baseline to valley height between the isomers is less than 25% of the sum of the two peak heights. Otherwise, structural isomers are identified as isomeric pairs.

15. Calculations

15.1 When a compound has been identified, the quantitation of that compound will be based on the integrated abundance from the EICP of the primary characteristic ion in Tables 4 and 5. Use the base peak ion for internal and surrogate standards. If the sample produces an interference for the first listed ion, use a secondary ion to quantitate. Quantitation will be performed using external or internal standard techniques.

15.1.1 If the external standard calibration procedure is used, calculate the amount of material injected from the area of the characteristic ion using the calibration curve or calibration factor in Section 7.2.2. The concentration in the sample can be calculated from equation 2:

Eq. 2. $$\text{Concentration, } \mu g/L = \frac{(A)(V_t)}{(V_i)(V_s)}$$

where:

A = Amount of material injected, in nanograms.
V_i = Volume of extract injected (µL).
V_t = Volume of total extract (µL).
V_s = Volume of water extracted (mL).

15.1.2 If the internal standard calibration procedure was used, calculate the concentration in the sample using the response factor (RF) determined in Section 7.3.2 and equation 3.

Eq. 3

$$\text{Concentration, } \mu g/L = \frac{(A_s)(I_s)}{(A_{is})(RF)(V_o)}$$

where:

A_s = Area of the characteristic ion for the parameter to be measured.
A_{is} = Area of the characteristic ion for the internal standard.
I_s = Amount of internal standard added to each extract (µg).
V_o = Volume of water extracted (liters).

15.2 Report results in micrograms per liter without correction for recovery data. When duplicate and spiked samples are analyzed, report all data obtained with the sample results.

15.3 If the surrogate standard recovery falls outside the control limits in Section 8.3, data for all parameters in that fraction of the sample must be labeled as suspect.

16. Method Performance

16.1 The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with a 99% confidence that the value is above zero[1]. The MDL concentrations listed in Tables 4 and 5 were obtained using reagent water[13].

16.2 The average recoveries and the average standard deviations of the percent recoveries, presented in Table 5, were the result of a study of the accuracy and precision of this method by several laboratories. The values listed represent the results from two to four laboratories[14].

16.3 The U.S. Environmental Protection Agency is in the process of conducting an interlaboratory method study to fully define the performance of this method.

17. Screening Procedure for 2,3,7,8-TCDD

17.1 If the sample must be screened for the presence of 2,3,7,8-TCDD, it is recommended that the reference material not be handled in the laboratory unless extensive safety precautions are employed. It is sufficient to analyze the base/neutral extract by selected ion monitoring (SIM) GC/MS techniques, as follows:

17.1.1 Concentrate the base/neutral extract to a final volume of 0.2 mL.

17.1.2 Adjust the temperature of the base/neutral column (Section 5.6.2) to 220 °C.

17.1.3 Operate the mass spectrometer to acquire data in the SIM mode using the ions at m/e 257, 320 and 322 and a dwell time no greater than 333 milliseconds per ion.

17.1.4 Inject 5 to 7 µL of the base/neutral extract. Collect SIM data for a total of 10 minutes.

17.1.5 The possible presence of 2,3,7,8-TCDD is indicated if all three ions exhibit simultaneous peaks at any point in the selected ion current profiles.

17.1.6 For each occurrence where the possible presence of 2,3,7,8-TCDD is indicated, calculate and retain the relative abundances of each of the three ions.

17.2 False positives to this test may be caused by the presence of single or coeluting combinations of compounds whose mass spectra contain all of these ions.

17.3 Conclusive results of the presence and concentration level of 2,3,7,8-TCDD can be obtained only from a properly equipped laboratory through the use of method 613 of other approved alternate test procedures.

References

1. See Appendix A.
2. "Sampling and Analysis Procedures for Screening of Industrial Effluents for Priority Pollutants." U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268, March 1977, Revised April 1977. Available from Effluent Guidelines Division, Washington, DC 20460.
3. ASTM Annual Book of Standards, Part 31, D 3694. "Standard Practice for Preparation of Sample Containers and for Preservation," American Society for Testing and Materials, Philadelphia, PA, p. 679, (1980).
4. "Carcinogens—Working with Carcinogens," Department of Health, Education, and Welfare, Public Health Service, Center for Disease Control, National Institute for Occupational Safety and Health, Publication No. 77-206, Aug. 1977.
5. "OSHA Safety and Health Standards, General Industry," (29CFR1910), Occupational Safety and Health Administration, OSHA 2206, (Revised, January 1976).
6. "Safety in Academic Chemistry Laboraties," American Chemical Society Publication, Committee on Chemical Safety, 3rd Edition, 1979.
7. "Handbook of Analytical Quality Control in Water and Wastewater Laboratories," EPA-600/4-79-019, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268, March 1979.
8. ASTM Annual Book of Standards, Part 31, D 3370, "Standard Practice for Sampling Water," American Society for Testing and Materials, Philadelphia, PA, p. 76, 1980.
9. "Methods 330.4 (Titrimetric, DPD-FAS) and 330.5 (Spectrophotometric, DPD) for Chlorine, Total Residual," Methods for Chemical Analysis of Water and Wastes, EPA 600-4/79-020, U.S. Environmental Protection Agency, Environmental Monitoring and Support Laboratory, Cincinnati, Ohio 45268, March 1979.
10. Eichelberger, J.W., Harris, L.E., and Budde, W.L., "Reference Compound to Calibrate Ion Abundance Measurement in Gas Chromatography-Mass Spectrometry," *Analytical Chemistry*, 47, 995 (1975).
11. McNair, H.M. and Bonelli, E.J., "Basic Chromatography," Consolidated Printing, Berkeley, California, p. 52, 1969.
12. Burke, J.A., "Gas Chromatography for Pesticide Residue Analysis; Some Practical Aspects," *Journal of the Association of Official Analytical Chemists, 48,* 1037 (1965).
13. "Method Detection Limit for Methods 624 and 625," Olynyk, P., Budde, W.L., Eichelberger, J.W., unpublished report October, 1980.
14. Kloepfer, R.D., "POTW Toxic Study, Analytical Quality Assurance Final Report," U.S. Environmental Protection Agency, Region VII, Kansas City, Kansas 66115, 1981.

Table 1. Base/Neutral Extractables

Parameter	STORET No.	CAS No.
Acenaphthene	34205	83-32-9
Acenaphthylene	34200	208-96-8
Anthracene	34220	120-12-7
Aldrin	39330	309-00-2
Benzo(a)anthracene	34526	56-55-3
Benzo(b)fluoranthene	34230	205-99-2
Benzo(k)fluoranthene	34242	207-08-9
Benzo(a)pyrene	34247	50-32-8
Benzo(ghi)perylene	34521	191-24-2
Benzyl butyl phthalate	34292	85-68-7
β-BHC	39338	319-85-7
δ-BHC	34259	319-86-8
Bis(2-chloroethyl)ether	34273	111-44-4
Bis(2-chloroethoxy)methane	34278	111-91-1
Bis(2-ethylhexyl)phthalate	39100	117-81-7
Bis(2-chloroisopropyl)ether	34283	108-60-1
4-Bromophenyl phenyl ether	34636	101-55-3
Chlordane	39350	57-74-9
2-Chloronaphthalene	34581	91-58-7
4-Chlorophenyl phenyl ether	34641	7005-72-3
Chrysene	34320	218-01-9
4,4'-DDD	39310	72-54-8
4,4'-DDE	39320	72-55-9
4,4'-DDT	39300	50-29-3
Dibenzo(a,h)anthracene	34556	53-70-3
Di-n-butylphthalate	39110	84-74-2
1,3-Dichlorobenzene	34566	541-73-1
1,2-Dichlorobenzene	34536	95-50-1
1,4-Dichlorobenzene	34571	106-46-7
3,3'-Dichlorobenzidine	34631	91-94-1
Dieldrin	39380	60-57-1
Diethyl phthalate	34336	84-66-2
Dimethyl phthalate	34341	131-11-3
2,4-Dinitrotoluene	34611	121-14-2
2,6-Dinitrotoluene	34626	606-20-2
Di-n-octylphthalate	34596	117-84-0
Endosulfan sulfate	34351	1031-07-8
Endrin aldehyde	34366	7421-93-4
Fluoranthene	34376	206-44-0
Fluorene	34381	86-73-7
Heptachlor	39410	76-44-8
Heptachlor epoxide	39420	1024-57-3
Hexachlorobenzene	39700	118-74-1
Hexachlorobutadiene	34391	87-68-3
Hexachloroethane	34396	67-72-1
Indeno(1,2,3-cd)pyrene	34403	193-39-5
Isophorone	34408	78-59-1
Naphthalene	34696	91-20-3
Nitrobenzene	34447	98-95-3
N-Nitrosodi-n-propylamine	34428	621-64-7
PCB-1016	34671	12674-11-2
PCB-1221	39488	11104-28-2
PCB-1232	39492	11141-16-5
PCB-1242	39496	53469-21-9
PCB-1248	39500	12672-29-6
PCB-1254	39504	11097-69-1
PCB-1260	39508	11096-82-5
Phenanthrene	34461	85-01-8
Pyrene	34469	129-00-0
Toxaphene	39400	8001-35-2
1,2,4-Trichlorobenzene	34551	120-82-1

Table 2. Acid Extractables

Parameter	STORET No.	CAS No.
4-Chloro-3-methylphenol	34452	59-50-7
2-Chlorophenol	34586	95-57-8
2,4-Dichlorophenol	34601	120-83-2
2,4-Dimethylphenol	34606	105-67-9
2,4-Dinitrophenol	34616	51-28-5
2-Methyl-4,6-dinitrophenol	34657	534-52-1
2-Nitrophenol	34591	88-75-5
4-Nitrophenol	34646	100-02-7
Pentachlorophenol	39032	87-86-5
Phenol	34694	108-95-2
2,4,6-Trichlorophenol	34621	88-06-2

Table 3. Additional Extractable Parameters*

Parameter	STORET No.	CAS No.	Method
Benzidine	39120	92-87-5	605
α-BHC	39337	319-84-6	608
γ-BHC	39340	58-89-8	608
Endosulfan I	34361	959-98-8	608
Endosulfan II	34356	33213-65-9	608
Endrin	39390	72-20-8	608
Hexachlorocyclopentadiene	34386	77-47-4	612
N-Nitrosodimethylamine	34438	62-75-9	605
N-Nitrosodiphenylamine	34433	86-30-6	605

*See Section 1.2 of method

Table 4. Chromatographic Conditions, Method Detection Limits and Characteristic Ions for Base/Neutral Extractables

Parameter	Retention Time (min.)	Method Detection Limit (µg/L)	Characteristic Ions					
			Electron Impact			Chemical Ionization (Methane)		
			Primary	Secondary				
1,3-Dichlorobenzene	7.4	1.9	146	148	113	146	148	150
1,4-Dichlorobenzene	7.8	4.4	146	148	113	146	148	150
Hexachloroethane	8.4	1.6	117	201	199	199	201	203
Bis(2-chloroethyl)ether	8.4	5.7	93	63	95	63	107	109
1,2-Dichlorobenzene	8.4	1.9	146	148	113	146	148	150
Bis(2-chloroisopropyl)ether	9.3	5.7	45	77	79	77	135	137
N-Nitrosodi-n-propyl amine			130	42	101			
Nitrobenzene	11.1	1.9	77	123	65	124	152	164
Hexachlorobutadiene	11.4	0.9	225	223	227	223	225	227
1,2,4-Trichlorobenzene	11.6	1.9	180	182	145	181	183	209
Isophorone	11.9	2.2	82	95	138	139	167	178
Naphthalene	12.1	1.6	128	129	127	129	157	169
Bis(2-chloroethoxy)methane	12.2	5.3	93	95	123	65	107	137
Hexachlorocyclopentadiene*	13.9		237	235	272	235	237	239
2-Chloronaphthalene	15.9	1.9	162	164	127	163	191	203
Acenaphthylene	17.4	3.5	152	151	153	152	153	181
Acenaphthene	17.8	1.9	154	153	152	154	155	183
Dimethyl phthalate	18.3	1.6	163	194	164	151	163	164
2,6-Dinitrotoluene	18.7	1.9	165	89	121	183	211	223
Fluorene	19.5	1.9	166	165	167	166	167	195
4-Chlorophenyl phenyl ether	19.5	4.2	204	206	141			
2,4-Dinitrotoluene	19.8	5.7	165	63	182	183	211	223
Diethylphthalate	20.1	22	149	177	150	177	223	251
N-Nitrosodiphenylamine*	20.5	1.9	169	168	167	169	170	198
Hexachlorobenzene	21.0	1.9	284	142	249	284	286	288
α-BHC*	21.1		183	181	109			
4-Bromophenyl phenyl ether	21.2	1.9	248	250	141	249	251	277
γ-BHC*	22.4		183	181	109			
Phenanthrene	22.8	5.4	178	179	176	178	179	207
Anthracene	22.8	1.9	178	179	176	178	179	207
β-BHC	23.4	4.2	181	183	109			
Heptachlor	23.4	1.9	100	272	274			
δ-BHC	23.7	3.1	183	109	181			
Aldrin	24.0	1.9	66	263	220			

Table 4. *(Continued)*

Parameter	Retention Time (min.)	Method Detection Limit (µg/L)	Characteristic Ions					
			Electron Impact			Chemical Ionization (Methane)		
			Primary	Secondary				
Dibutyl phthalate	24.7	2.5	149	150	104	149	205	279
Heptachlor epoxide	25.6	2.2	353	355	351			
Endosulfan I*	26.4	—	237	339	341			
Fluoranthene	26.5	2.2	202	101	100	203	231	243
Dieldrin	27.2	2.5	79	263	279			
4,4'-DDE	27.2	5.6	246	248	176			
Pyrene	27.3	1.9	202	101	100	203	231	243
Endrin*	27.9	—	81	263	82			
Endosulfan II*	28.6	—	237	339	341			
4,4'-DDD	28.6	2.8	235	237	165			
Benzidine*	28.8	44	184	92	185	185	213	225
4,4'-DDT	29.3	4.7	235	237	165			
Endosulfan sulfate	29.8	5.6	272	387	422			
Endrin aldehyde	—	—	67	345	250			
Butyl benzyl phthalate	29.9	2.5	149	91	206	149	299	327
Bis(2-ethylhexyl) phthalate	30.6	2.5	149	167	279	149		
Chrysene	31.5	2.5	228	226	229	228	229	257
Benzo(a)anthracene	31.5	7.8	228	229	226	228	229	257
3,3'-Dichlorobenzidine	32.2	16.5	252	254	126			
Di-n-octylphthalate	32.5	2.5	149					
Benzo(b)fluoranthene	34.9	4.8	252	253	125	252	253	281
Benzo(k)fluoranthene	34.9	2.5	252	253	125	252	253	281
Benzo(a)pyrene	36.4	2.5	252	253	125	252	253	281
Indeno(1,2,3-c,d)pyrene	42.7	3.7	276	138	277	276	277	305
Dibenzo(a,h)anthracene	43.2	2.5	278	139	279	278	279	307
Benzo(ghi)perylene	45.1	4.1	276	138	277	276	277	305
N-Nitrosodimethyl amine*	—	—	42	74	44			
Chlordane**	19 to 30	—	373	375	377			
Toxaphene**	25 to 34	—	159	231	233			
PCB 1016**	18 to 30	—	224	260	294			
PCB 1221**	15 to 30	30	190	224	260			
PCB 1232**	15 to 32	—	190	224	260			
PCB 1242**	15 to 32	—	224	260	294			
PCB 1248**	12 to 34	—	294	330	362			
PCB 1254**	22 to 34	36	294	330	362			
PCB 1260**	23 to 32	—	330	362	394			

*See Section 1.2.

**These compounds are mixtures of various isomers. (See Figures 2 to 12)

Gas Chromatographic conditions: Glass column 1.8 m long × 2 mm ID packed with Supelcoport (100/120 mesh) coated with 3% SP-2250. Carrier gas: helium at a flow rate of 30 mL per min.
Temperature: Isothermal at 50°C for 4 min., then 8° per min to 270°C. Hold at 270°C for 30 min.

Table 5. *Chromatographic Conditions, Method Detection Limits and Characteristic Ions for Acid Extractables*

Parameter	Retention Time (min.)	Method Detection Limit (µg/L)	Characteristic Ions					
			Electron Impact			Chemical Ionization (Methane)		
			Primary	Secondary				
2-Chlorophenol	5.9	3.3	128	64	130	129	131	157
2-Nitrophenol	6.5	3.6	139	65	109	140	168	122
Phenol	8.0	1.5	94	65	66	95	123	135
2,4-Dimethylphenol	9.4	2.7	122	107	121	123	151	163
2,4-Dichlorophenol	9.8	2.7	162	164	98	163	165	167
2,4,6-Trichlorophenol	11.8	2.7	196	198	200	197	199	201
4-Chloro-3-methylphenol	13.2	3.0	142	107	144	143	171	183
2,4-Dinitrophenol	15.9	42	184	63	154	185	213	225
2-Methyl-4,6-dinitrophenol	16.2	24	198	182	77	199	227	239
Pentachlorophenol	17.5	3.6	266	264	268	267	265	269
4-Nitrophenol	20.3	2.4	65	139	109	140	168	122

Chromatographic conditions: 1.8 m long × 2 mm ID glass column packed with Supelcoport (100/120 mesh) coated with 1% SP-1240. Carrier gas: helium at a flow rate of 30 mL per min. Column temperature, isothermal at 70°C for 2 min, then 8° per min, to 200°.

Table 6. *Accuracy and Precision for Base/Neutral Extractables*

Parameter	Reagent Water		Wastewater	
	Average Percent Recovery	Standard Deviation (%)	Average Percent Recovery	Standard Deviation (%)
Acenaphthene	77	23	83	29
Acenaphthylene	78	22	82	23
Aldrin	72	6	–	–
Anthracene	84	14	76	22
Benzo(a)anthracene	83	19	75	28
Benzo(b)fluoranthene	96	68	41	21
Benzo(k)fluoranthene	96	68	47	27
Benzo(ghi)perylene	80	45	68	40
Benzo(a)pyrene	90	22	43	21
Benzidine	87	61	63	55
Butyl benzyl phthalate	47	32	74	43
β-BHC	69	25	–	–
δ-BHC	56	18	–	–
Bis(2-chloroethoxy)methane	84	33	82	74
Bis(2-chloroethyl)ether	56	36	72	37
Bis(2-chloroisopropyl)ether	71	33	71	39
Bis (2-ethylhexyl) phthalate	129	50	82	63
4-Bromophenyl phenyl ether	80	17	75	20
2-Chloronaphthalene	73	24	79	27
4-Chlorophenyl phenyl ether	45	11	–	–
Chrysene	83	19	75	28
4,4'-DDD	80	9	–	–
4,4'-DDE	69	20	–	–
4,4'-DDT	63	15	–	–
Dibenzo(a,h)anthracene	82	39	70	40
Di-n-butyl phthalate	70	25	93	51
1,2-Dichlorobenzene	59	27	62	28
1,3-Dichlorobenzene	55	28	54	24
1,4-Dichlorobenzene	61	31	63	35
3,3'-Dichlorobenzidine	184	174	143	145
Diethylphthalate	42	28	48	28
Dimethyl phthalate	25	33	35	36
2,4-Dinitrotoluene	83	32	79	34
2,6-Dinitrotoluene	79	18	79	25
Di-n-octylphthalate	97	37	89	62
Endosulfan sulfate	79	29	–	–
Fluoranthene	89	19	80	26
Fluorene	77	16	80	20
Heptachlor	69	6	–	–
Heptachlor epoxide	82	7	–	–
Hexachlorobenzene	79	20	71	22
Hexachlorobutadiene	46	25	48	28
Hexachlorocyclopentadiene	27	25	12	12
Hexachloroethane	46	21	52	26
Indeno (1,2,3-cd) pyrene	65	37	81	43
Isophorone	75	33	77	42
Naphthalene	6	32	75	35
Nitrobenzene	72	31	82	54
N-Nitrosodi-n-propylamine	68	39	76	45
N-Nitrosodiphenylamine	84	24	86	31
PCB-1221	77	11	–	–
PCB-1254	80	13	–	–
Phenanthrene	84	14	76	22
Pyrene	86	15	80	23
1,2,4-Trichlorobenzene	64	16	69	26

Spiked between 5 to 2400 µg/L.

Table 7. *Accuracy and Precision for Acid Extractables*

Parameter	Reagent Water		Wastewater	
	Average Percent Recovery	Standard Deviation (%)	Average Percent Recovery	Standard Deviation (%)
4-Chloro-3-methylphenol	79	18	75	21
2-Chlorophenol	70	23	71	25
2,4-Dichlorophenol	74	24	80	21
2,4-Dimethylphenol	64	25	58	26
2,4-Dinitrophenol	78	21	108	56
2-Methyl-4,6-dinitrophenol	83	18	90	35
4-Nitrophenol	41	20	43	16
2-Nitrophenol	75	25	75	27
Pentachlorophenol	86	20	66	36
Phenol	36	14	36	21
2,4,6-Trichlorophenol	77	20	81	20

Spiked from 10 to 1500 µg/L.

Table 8. *Suggested Internal and Surrogate Standards*

Base/Neutral Fraction	Acid Fraction
Aniline-d_5	2-Fluorophenol
Anthracene-d_{10}	Pentafluorophenol
Benzo(a)anthracene-d_{12}	Phenol-d_5
4,4'-Dibromobiphenyl	2-Perfluoromethyl phenol
4,4'-Dibromooctafluorobiphenyl	
Decafluorobiphenyl	
2,2'-Difluorobiphenyl	
4-Fluoroaniline	
1-Fluoronaphthylene	
2-Fluoronaphthylene	
Naphthalene-d_8	
Nitrobenzene-d_5	
2,3,4,5,6-Pentafluorobiphenyl	
Phenanthrene-d_{10}	
Pyridine-d_5	

Table 9. *DFTPP Key Ions and Ion Abundance Criteria*

Mass	Ion Abundance Criteria
51	30-60% of mass 198
68	less than 2% of mass 69
70	less than 2% of mass 69
127	40-60% of mass 198
197	less than 1% of mass 198
198	base peak, 100% relative abundance
199	5-9% of mass 198
275	10-30% of mass 198
365	greater than 1% of mass 198
441	present but less than mass 443
442	greater than 40% of mass 198
443	17-23% of mass 442

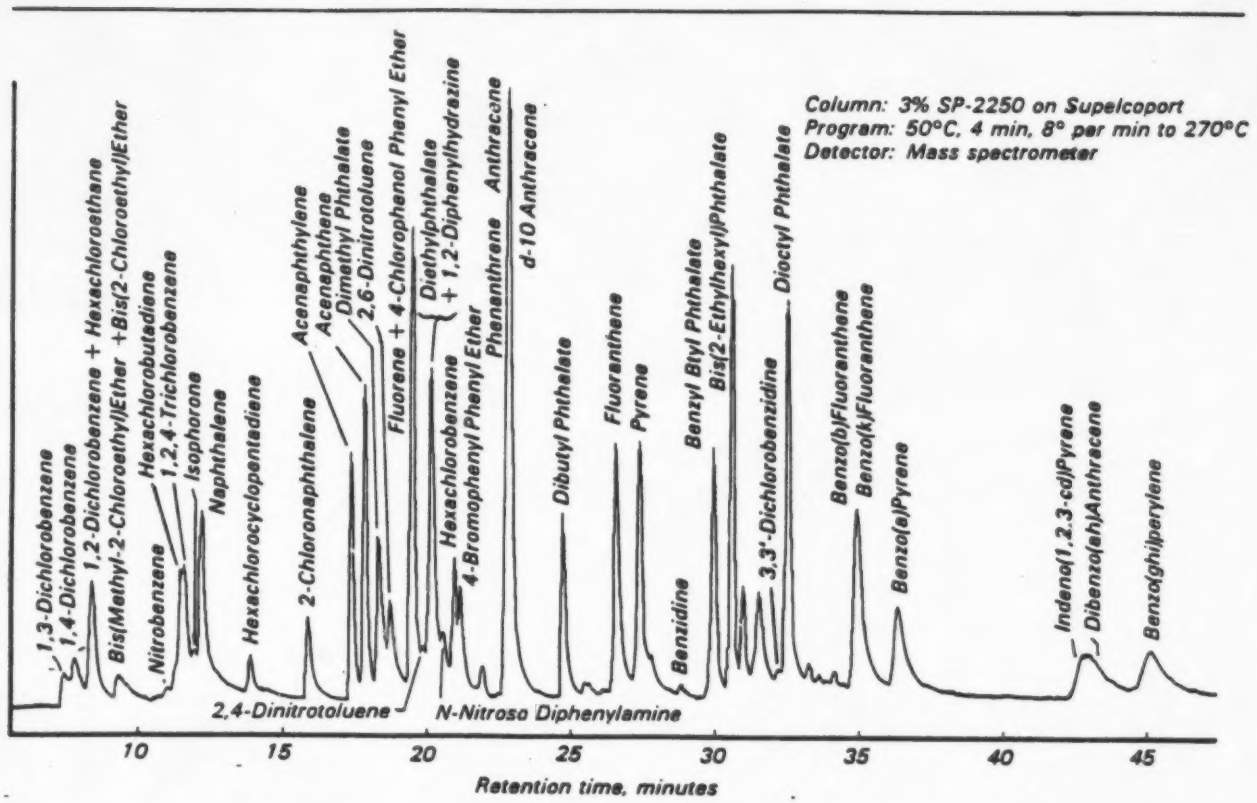


Figure 1. *Gas chroamatogram of base/neutral fraction.*

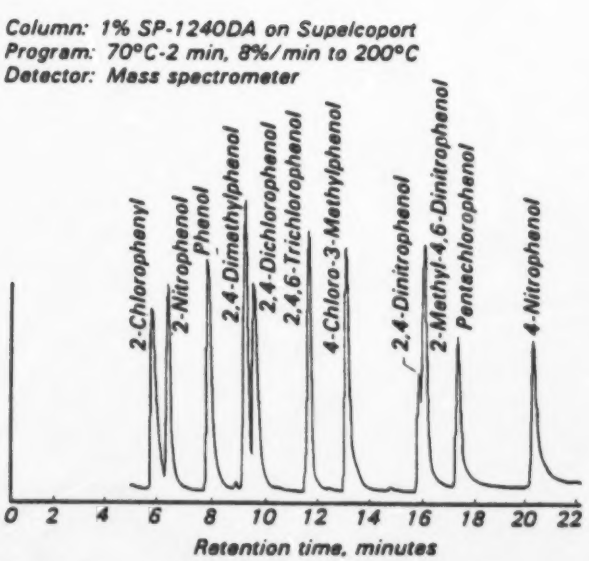


Figure 2. *Gas chromatogram of acid fraction.*

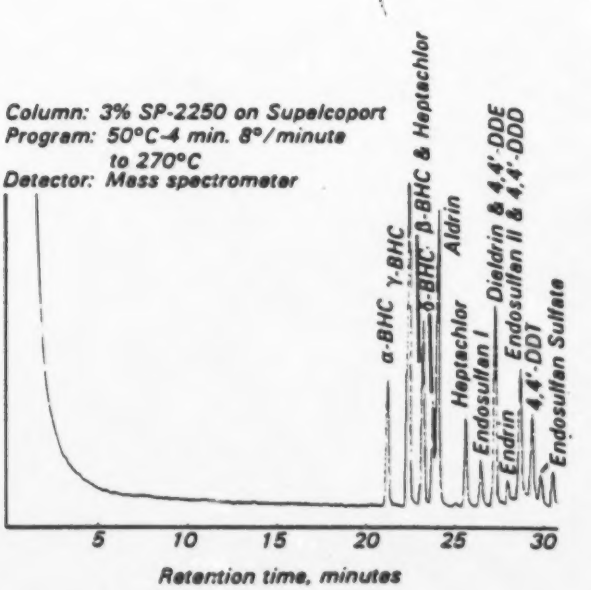


Figure 3. *Gas chromatogram of pesticide fraction.*

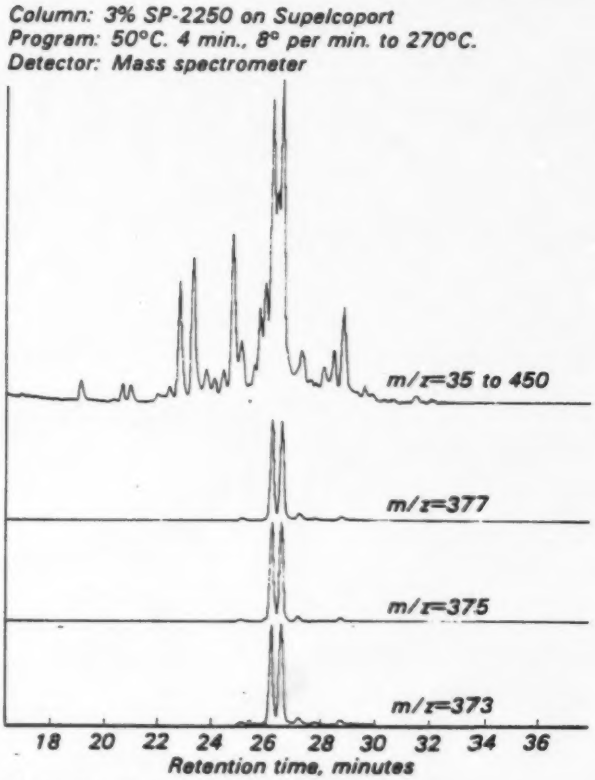


Figure 4. *Gas chromatogram of chlordane.*

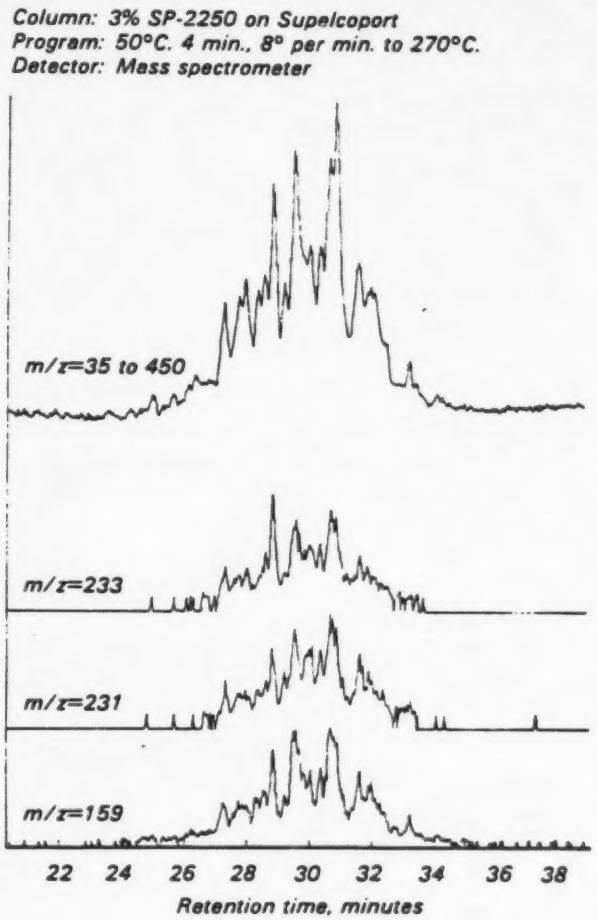


Figure 5. *Gas chromatogram of toxaphene.*

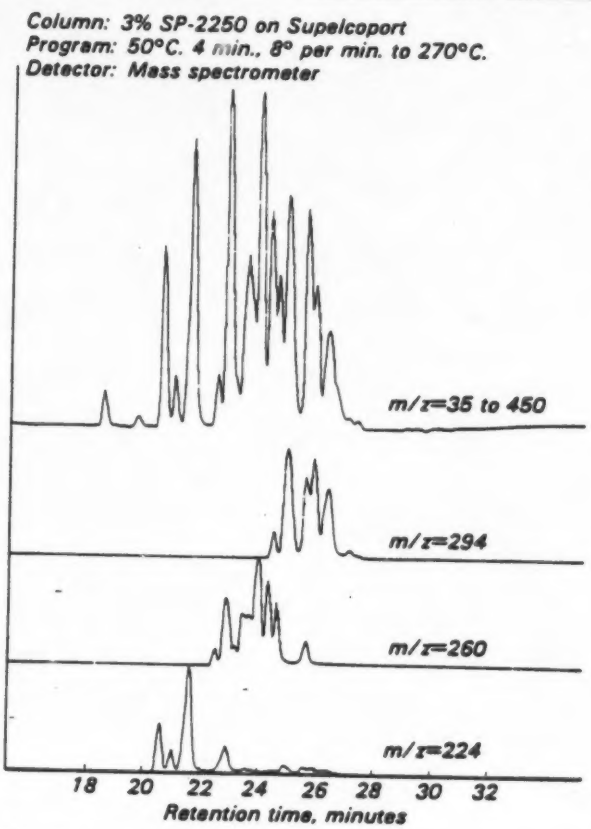


Figure 6. *Gas chromatogram of PCB-1016.*

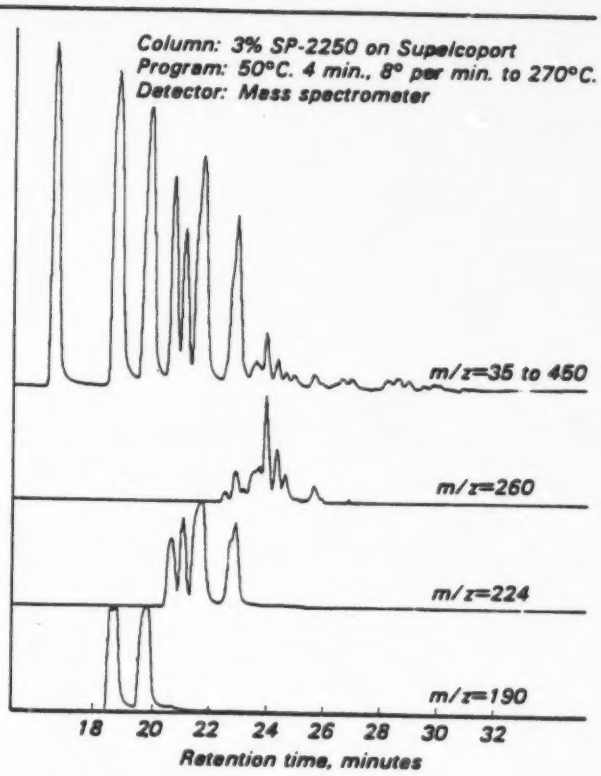


Figure 7. *Gas chromatogram of PCB-1221.*

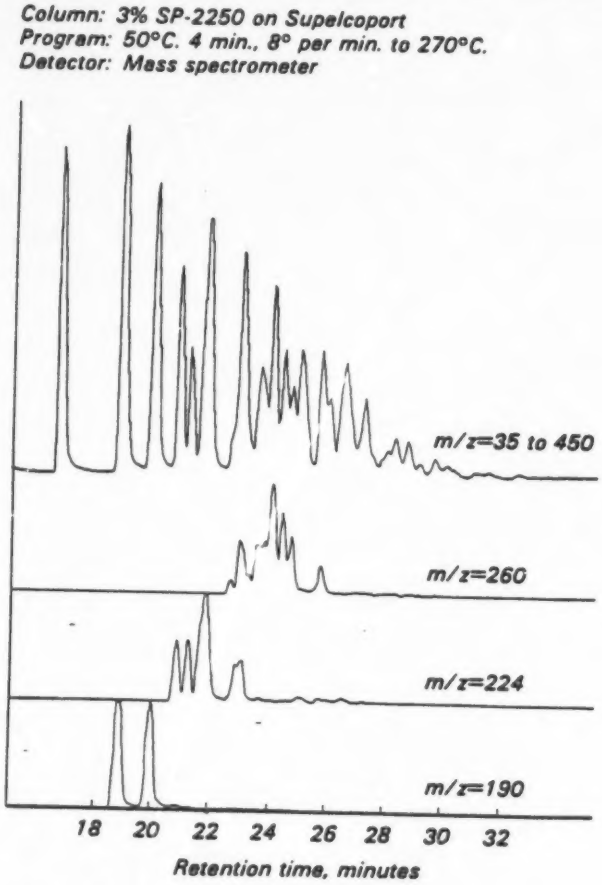


Figure 8. *Gas chromatogram of PCB-1232.*

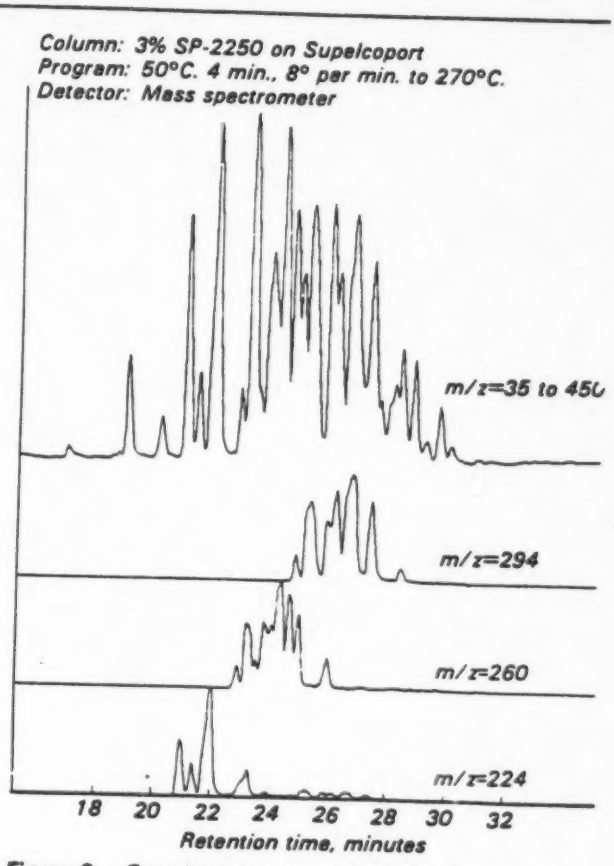
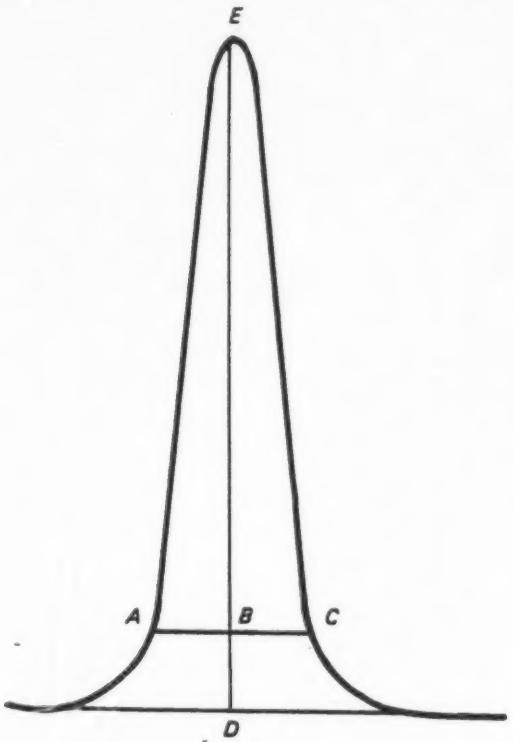


Figure 9. *Gas chromatogram of PCB-1242.*



$$\text{Tailing Factor} = \frac{BC}{AB}$$

Example calculation:

Peak Height = DE = 100mm
10% Peak Height = BD = 10 mm
Peak Width at 10% Peak Height = AC = 23 mm
AB = 11 mm
BC = 12 mm

Therefore: Tailing Factor $= \frac{12}{11} = 1.1$

Figure 13. *Tailing factor calculation.*

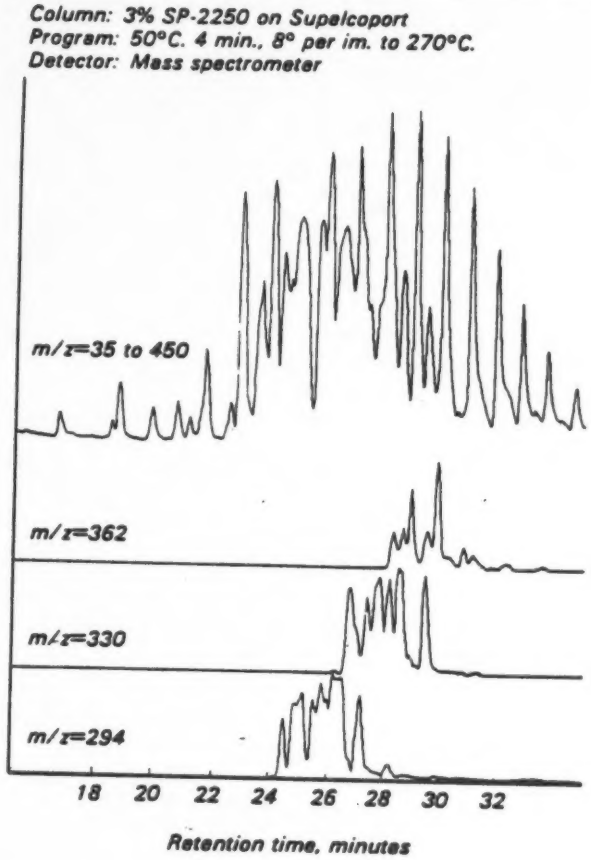


Figure 10. *Gas chromatogram of PCB-1248.*

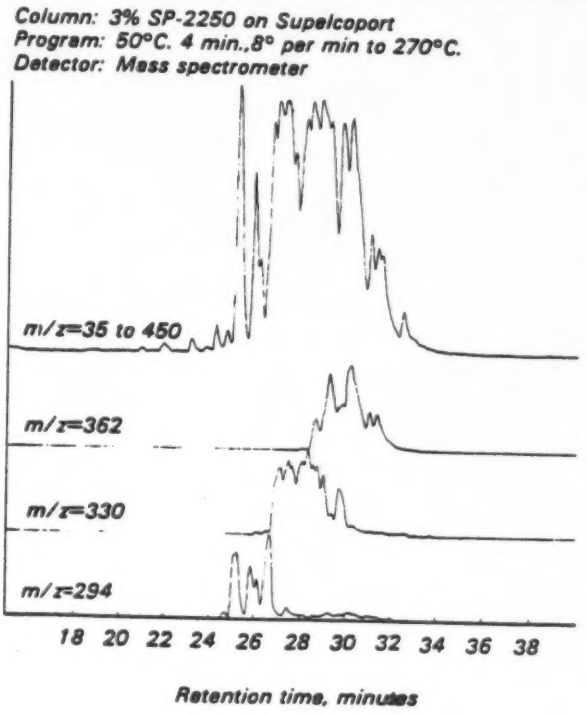


Figure 11. *Gas chromatogram of PCB-1254.*

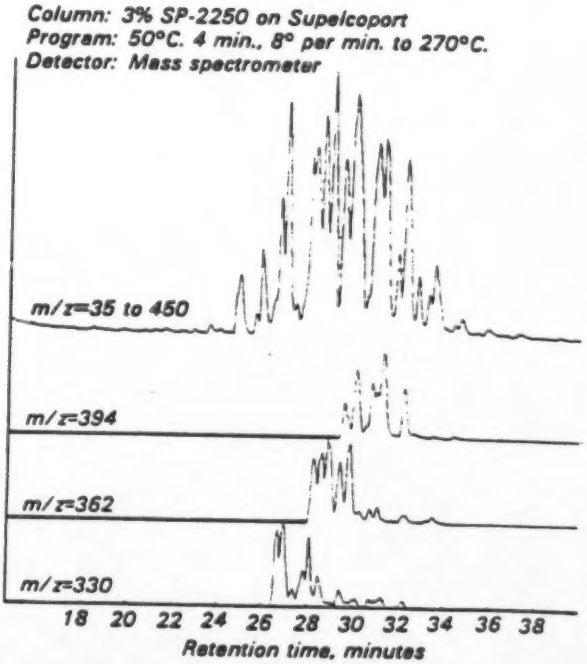


Figure 12. *Gs chromatogram of PCB-1260.*